Flanagan, Sarah

From: Vaughn, Stephanie
Sent: Tuesday, February 05, 2013 11:40 AM
To: Flanagan, Sarah; Hick, Patricia
Subject: Fw: Response to EPA and DEP Comments on RM 10.9 Pre-Final Design

----- Forwarded by Stephanie Vaughn/R2/USEPA/US on 02/05/2013 11:39 AM -----

From: "Stan Kaczmarek" <StanK@demaximis.com>
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Date: 01/25/2013 05:17 PM
Subject: Re: Response to EPA and DEP Comments on RM 10.9 Pre-Final Design

Attached are documents for your review.
Our proposed agenda for this meeting is:

1. Review of response to EPA Comments
2. Review of response to DEP Comments
3. Outline of deliverables expected on February 22

Stan

>>> On 1/25/2013 at 9:57 AM, in message <51029D67.8C6 : 149 : 51652>, Stan Kaczmarek wrote:

I will forward to each of you later today our proposed responses to the EPA and DEP comments on the RM 10.9 Rem
forward to the discussion and feedback it generates.

Stan

Dial In: 1-866-503-5711 (from US and Canada)
Conference Code: 178-433-9781#


RTC for NJDEP Comments on Pre-...


RTC for USEPA Comments on Pre-...

Document Reviewed—LPR_RM10 9_PreFinal_Design_20121130.docx

Comment No.					
Word	**NJDEP**	**Location**	**Text Highlighted**	**Comment**	**Response**
1	—	[General Comment]	—	The Pre-Final Design Report may underestimate the potential for sediment and associated contaminants (including colloidal and dissolved forms – these have not been addressed in the report) to be dispersed from the project area. To address this concern, a comprehensive surface water quality monitoring program should be implemented; the scope of this program should be developed by the USEPA, NJDEP and the CPG. Suggestions are provided below in response to Sections 2 and 4.	As there has been no free product identified within the sediment and previous monitoring studies did not identify any significant dissolved COPCs, dissolved and colloidal phases of contaminants are not expected. The design document will be revised to include text indicating as such. An appropriate water quality monitoring program (WQMP) will be developed, submitted for review and approval, and then implemented .
2	—	Appendices C, E, G, I, J	Appendixes	Appendix C, design drawings, and Appendix J, Construction QA, no comments were provided and defer to subaqueous cap design engineers within either USEPA or USACE for the information in these documents. Appendices E, G and I: These appendices were not provided to the NJDEP for review and were not posted to the sharepoint website for the NJDEP's review.	Noted concerning Appendix C, design drawings, Appendix J and Construction QA. Appendix E Construction Environmental Monitoring QAPP Addendum was still in progress and not included in the 11-30-12 Pre-Final version. Appendix G Community HSP was also in development so only an outline was provided. Appendix I Cap Design Field Work and Treatability QAPP Addendum – This was provided in December 2012. CPG rec'd comments from NJDEP on this document in a separate communication. The Final Design will include Appendices E, G and I.
3	3	Appendix A	Appendix A: RM 10.9 Concentration Data and Figures for 2,3,7,8-TCDD, Mercury, and Total PCBs at Select Depth Intervals	Figure A-2c requires revision, as the 2,3,7,8-TCDD concentrations are incorrect. Review and verification of other similar figures is recommended. Based on detailed core data maps provided it appears that zones of higher concentrations (in instances orders of magnitude) appear in the upper northeastern 1/3 of the proposed remediation area. Specifically Cores 2011 RM 10.9 – 0326; 0340; 0331; 0323; 0335; 0334 show the highest concentrations in TCDD's, Mercury & PCB's. This being the case, it may be beneficial to target said areas with more rigorous controls while dredging these locations. Such controls could include use of state-of the art siltation curtains to remain in place longer (specified) periods after dredging is done; removal of curtains during slack tides; and /or employment of coffer boxes to sequester and reduce contaminant mobility resulting from dredging these target areas.	Figure A-2c will be corrected. A comprehensive daily brief detailing work conditions for the day will be conducted and include, but not be limited to anticipated sediment conditions, tides, river flow and weather conditions. The proposed BMP will provide sufficient controls for minimizing potential impacts to water quality. Based on the resuspension modeling results, the use of silt curtains are considered an effective resuspension control approach for the project. Coffer dams are used to dewater an area for construction and would require equipment and sediment to be transported across the Riverside Park. The use of cofferdams would also impact schedule due to the mobilization/ demobilization of additional heavy equipment. For all these reasons, cofferdams are not being considered for resuspension control on this project.

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4	9	Figure 4-8, Water Quality Monitoring Locations	4-8 Water Quality Monitoring Locations	Neither the text nor this figure describe the basis for the proposed water quality monitoring locations, therefore, this information needs to be provided. Given the tidal river conditions, a minimum of 2 pairs of equidistant upstream and downstream monitoring locations are recommended. It is unclear why the far-field downstream station in Figure 4-8 is almost 3x's the distance from the project's analogous upstream station. Table 4-6 seems to indicate the locations are equidistant. These pairs should be the same distance from the project, unless technical justification otherwise is provided. In addition, this section, or the forthcoming Appendix E (Construction Environmental Monitoring Program) should identify Data Quality Objectives for the monitoring program (including minimum detection limits for all COPCs) which should describe how the goals in Section 2 (ARARs) are to be met by using the tools in Sections 4.4.2 (DREDGE model) and 4.6.1.3 (Monitoring).	Near field monitoring locations are proposed both upstream and downstream of the removal area (Buoys #2 & 3).The far field locations were selected based on bridge locations. These locations are anticipated to be equidistant from the removal area and the figure will be revised accordingly. The DQO will be identified in the WQMP.
5	1	Section 1.1, page 1-1 and Figure 1-2	Project Description	Related to the bathymetry comment above, the effects of Hurricane Sandy on bathymetry in the Removal Area., and thus potentially on the scope of the Removal Action, should be evaluated prior to the implementation of the Removal Action.	A pre-construction bathymetric survey will be performed by the dredging contractor prior to beginning dredging.
6	2	Section 2.1, paragraph #6, page 2-2	The relevant water quality criteria for the contaminants of concern are referenced in Table 2-4. General technical policies and numerical limits have been established under NJAC 7:9B. One of these policies is using USEPA Method 1631 to test for mercury. The NJDEP has the authority to set nutrient limits and require best available technologies. Mixing zones are allowed; rules on mixing zone distances are set forth, as well as methods to determine in-stream concentrations within mixing zones.	The size of the mixing zone (and thus the locations of the up-stream and downstream surface water quality monitoring locations) should be consistent with the requirements in N.J.A.C. 7:9B (see Table 2-4). Please verify that this is the case and describe how this was determined. Although this project is not a formal NJPDES discharge point, the proposed operation on the whole, is similar to one. In this case, re-suspension within a certain distance from the dredge operations (these could be predicted via the DREDGE model, Section 4.4.2 and/or other predictive methods using site-specific information) is expected. The site specific trigger and action levels (Section 4.6.1.3) for addressing sediment re-suspension conditions should be applied outside the designated mixing/impact zone.	The requirements of N.J.A.C. 7:9B are not considered relevant as they apply to NPDES discharge points. The size of the mixing zone will be based on the outputs of the DREDGE model which can be used to determine the dredging operations area of influence. The proposed resuspension monitoring points are based on the DREDGE Model results which assume a 1% resuspension rate under normal river flow conditions (1,200 cfm) and no environmental controls (i.e., silt curtains). The model provides an estimation of TSS concentration at various distances from the dredging operations. The TSS concentrations are based on a background concentration of 0 mg/L The DREDGE Model is used to simulate the size and extent of the resulting suspended sediment plume caused by the dredging operations. Based on the DREDGE Model outputs the weighted average TSS concentration 200 m downstream of the dredging operations would be 21 mg/L and this concentration drops off significantly at 400 m (7.7 mg/L). Therefore, the "dredging area of influence" is considered between 200 and 400 m. As a result 300 m was selected as the distance for the near field monitoring locations.

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7	4a	Section 4.2, Estimated Volume of Dredged Material, sediment, page 4-1	Estimated Volume of Dredged Material	This section states that sediment north of Station 31+00 will be dredged to native material because of the steep slope that may not sustain a cap. This is appropriate, however, clarification is needed for: what is meant by "native material" (free of all manmade contaminants, or a certain level of residual contamination?), the anticipated dredge depth, and how this either has been or will be determined.	"Native material" designation is based on geotechnical observations of sample cores. Based on the boring logs this material had the following properties: *Native silty CLAY, (5YR 4/2) dark reddish gray, medium plasticity , medium stiff to stiff, wet*.
	4b	Section 4.2, Estimated Volume of Dredged Material, sediment, page 4-1	Estimated Volume of Dredged Material	In addition, sediment data reveal that at the approximate depth of 2 feet into the sediment bed, certain cores reveal significantly elevated 2,3,7,8-TCDD (> 15,000 ppt). Special consideration needs to be given to these areas with regard to either dredging deeper to remove excess concentrations at the cut line, or using special provisions for capping. These locations include: 310, 314, 316, 318, 322, 333, 338, 339, 340, 343, 344, 346, 350 and 351. Comparing Figures 4-2 (existing conditions) and Figure A-1 (Sample locations) indicates that all of these cores are south of Station 31+00. Therefore, additional provisions for addressing excess contamination at the cap interface is needed, particularly in regions of higher sheer stress. This condition requires special attention both during dredging/capping operations and for long-term cap maintenance.	In accordance with the RM 10.9 Removal Action, the removal and capping are being undertaken to "to reduce exposure of receptors to, and prevent potentially significant migration of contaminants from [the removal area]". To meet the objectives of the Removal Action, the CPG has developed a design which will remove approximately 2 feet of sediment from the Removal Area and then cap this area with an active layer designed and engineered to prevent breakthrough of COPCs to the bio-active zone. In addition, the proposed pore water sampling program (QAPP D) supports the cap design and is biased towards these higher concentration areas.
8	5	Section 4.4.1, page 4-5	Relevant Site Conditions and Impact on Resuspension Risks	This section lists three factors that "are favorable for minimal sediment [and contaminant] resuspension …" This is good information, however, there are also limitations to the applicability of these factors that could result in increased sediment and contaminant resuspension . These include: a maximum river flow condition (needs to be specified) above which dredging operations will cease; the shallow water in the project area which may result in increased disturbance and resuspension of sediment due to the movement of the dredge barges and workboats; and, although the sediment to be dredged does not contain free product, dissolved and colloidal phases of contaminants may also be released into the water column during the dredging operation.	A maximum river flow condition will be specified in the Final Design and will be based on the effective use of a silt curtain system. Movement of the dredge, barges and work boat is anticipated to be minimal and the proposed BMPs are considered appropriate to control potential resuspension. The hydrophobic nature of the organic COPCs reduces the potential for the release of dissolved and colloidal phases of contaminants into the water column. In addition, no free product has been identified within the sediment.

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9	6	Section 4.4.2 DREDGE Model, page 4-5 and Table 4-3	DREDGE Model	The DREDGE Model input parameters assumes dredged material loss rates of only 0.5% and 1%. Under "typical" maintenance dredging operations up to 5-10% of the sediment to be dredged may be resuspended. In addition, the proposed factors differ substantially from sediment loss rates of 6% recently suggested by the CPG for the 8-Mile FFS project (CAG meeting Dec. 6, 2012, Newark, NJ) and 3%, used by the USEPA for the same project. In addition, through evaluation of the 2005 Passaic River Dredging Pilot Study, researchers estimated that approximately 0.8 to 2.2 % of total sediment mass dredged may be released to the water column (Chant, 2007). Thus, it does not seem appropriate to use only 0.5 and 1% resuspension values in the DREGE Model analyses, even though an environmental clamshell bucket will be used and the water column is shallow. These two factors may be counter-balanced by increased disturbance and resuspension of sediment due to the movement of the dredge barges and workboats in such shallow water. For these reasons, the currently proposed sediment loss input parameters for this project require further technical justification. At a minimum, the proposed factors should be modified upwards to be in line with the aforementioned Dredge Pilot findings.	It is not appropriate to compare maintenance dredging operations with environmental dredging operations. Nor is it appropriate to compare the RM 10.9 Removal Action to the 8-Mile FFS which has assumed production rates of up to 3,321 yd^3/day. The assumed dredge material loss rates (0.5 to 1% of total mass removed) are based on the USACE's **Technical Guidelines for Environmental Dredging of Contaminated Sediments** (Sept 2008) which indicates "*the conservative characteristic resuspension factor for mechanical dredges with environmental buckets without overflow is about 0.5 percent* [of the fine silt and clay fraction]*.*" The work will be conducted from deeper to shallower water so that the marine vessels will always have sufficient draft. The Contractors will also be restricted to 60% of full throttle when working in or adjacent to the removal area in order to minimize potential resuspension.
	7	Section 4.4.2 DREDGE Model, page 4-5 and Table 4-3	DREDGE Model	The DREDGE Model also uses a 1-year maximum flow of 6,000 ft^3/sec and 0.5 m/sec. Will the Final Design include a BMP limiting dredging operations to flows below these values?	Operations will cease when the river flow exceeds the recommended velocity for the effective use of a silt curtain system (approximately 1.7 to 2.5 ft/sec; note 1.7 fps is equivalent to 6000 cfm) unless it can be shown via monitoring that project water quality goals can be maintained without use of the silt curtain system.

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10	13	Section 4.4.3	Proposed Resuspension Control Approach	The BMPs listed in Section 4.4.3 are those that will be implemented as standard operating procedures . Additional BMPs are needed if the "trigger levels" are exceeded. Periodic water quality monitoring for key COPCs (total and dissolved fractions) should be implemented on a daily basis, with an exceedance of the turbidity "trigger level" resulting in additional monitoring for these COPCs.	When water quality monitoring detects turbidity at or above the trigger level specified in the WQMP, the BMPs of the dredging/capping operations will be evaluated in order to determine the potential cause of the exceedance. Dredging operations will continue during this investigation. If the SWQM data indicates that the Action level specified has been exceeded, the dredging activities will be immediately suspended and the cause of the event and appropriate corrective measures will be investigated. Management measures to mitigate the exceedance may include modifying the dredging equipment and operations, including bucket and cycle time; additional river quality monitoring, modifying and/or installing additional silt curtains;, modifying and/or installing additional absorbent boom; and modifying or suspending activities until river water quality is restored to below trigger values. COPC sampling data cannot be collected and analysed in a timeframe that will allow real-time management of dredging operations. Monitoring of COPCs will be conducted as a continuation of the baseline monitoring program. However, should an exceedance of the Action Level occur, additional water column sampling will be conducted outside the area of influence.
11	8	Section 4.4.4, page 4-7 and Figure 4-7	Silt Curtains	The Final Design Report should include a more detailed figure showing the installation and operation of the silt curtain. In addition, operational parameters for removing and reinstalling the silt curtain as the dredge barge and associated work boats moves must be established – for example, a maximum suspended sediment level inside the silt curtain should be established, above which the curtain will not be removed. This is needed to prevent the suspended sediment contained by the silt curtain from being dispersed into the river, thus significantly reducing its effectiveness. In addition, as noted in Section 4.4.4.1, the silt curtain must be designed and operated to "provide sufficient residence time to allow the larger sediment particles to settle out of suspension …"	A technical specification for silt curtains will be included with the Final Design. The means and methods to be employed for the installation of the silt curtain systems will be provided within the dredging subcontractor's Dredge and Operation Plan.
12	10	Section 4.6.1.1, page 4-9, Figure 4-8, and Table 4-6	Baseline Turbidity and TSS Monitoring	See Comment #2 to determine the locations of the surface water quality monitoring locations. Please provide the rationale for the assumption that the "dredging area of influence" (i.e. the mixing zone?) is 1,000 feet (300 meters) up- and downstream from the dredging area.	The DREDGE Model is used to simulate the size and extent of the resulting suspended sediment plume caused by dredging. Based on the DREDGE Model outputs the weighted average TSS concentration 200 m down or upstream (depending on tidal flows) of the dredging operations would be 21 mg/L and this concentration drops off significantly at 400 m (7.7 mg/L). Therefore, the "dredging area of influence" is considered between 200 and 400 m up or downstream of the river flow. As a result 300 m was selected as the distance for the near field monitoring locations.

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13	11a	Section 4.6.1.2, Initial Dredging Monitoring	Initial Dredging Monitoring	The overall framework for the Turbidity and TSS sampling for both the Baseline and Initial Dredging Monitoring is considered appropriate. To the extent possible, the baseline sampling for TSS should be conducted under a variety of flows and tidal stages.	Baseline monitoring will be conducted at least 30 days prior to beginning dredging operations and will cover all flows and tidal stages for that period. The extensive water column monitoring data collected from RM 10.2 in 2009/2010 will also be utilized in establishing baseline conditions.
	11b	Section 4.6.1.2, Initial Dredging Monitoring	Initial Dredging Monitoring	To strengthen the data collected, the initial turbidity-TSS correlation should be established during the baseline monitoring (Section 4.6.1.1), confirmed during the first 24-48 hours of dredging, and then on a weekly basis thereafter (or whenever it appears that dredging has resulted in a large increase in suspended sediment levels). Verifying the turbidity-SS correlation should not be limited to the first 48 hours of monitoring during dredging operations. c. In addition, sampling and analysis of key project COPCs (2,3,7,8-TCDD, total PCBs and Hg) is needed during these programs to additionally correlate water chemistry to TSS and Turbidity measurements. This is necessary to assist with evaluation/documentation of surface water quality ARAR attainment and to provide, if possible, Turbidity-TSS-COPC chemistry guidelines for feedback to project operations.	The initial turbidity-TSS correlation will be established based on the water column monitoring data collected from RM 10.2 in 2009/2010. This correlation will be refined during the baseline monitoring and updated as required during the initial dredging operations. Once established, TSS samples will be collected on a daily basis and when an exceedance of the turbidity trigger values has occurred. As with the TSS/turbidity correlation the 2009/2010 data collected from RM 10.2 will be used. COPC sampling will also be incorporated into the Baseline monitoring program and the results utilized to refine any correlations between COPCs and turbidity/TSS. The locations and frequency of the COPC sampling are being developed.
14	14a	Section 4.6.1.3, Resuspension Monitoring	Monitoring	In addition, the proposed application of the trigger and action levels needs to be re-evaluated because, as currently proposed, the trigger level is applied to buoy #2, upstream 1,000 ft., whereas, the action level is applied at buoy #3, downstream 1,000 ft. Instead, both the trigger and action levels should be applied at all stations (fixed or mobile), but at a minimum, the closest station downstream of dredging.	The trigger and action levels will be determined at all the monitoring locations and the text will be revised accordingly.
	14b	Section 4.6.1.3, Resuspension Monitoring	Monitoring	Bullet 3 indicates that chemical monitoring for 2,3,7,8-TCDD, total PCBs and Mercury will only be conducted when dredging has been suspended, which doesn't occur until the action level has been exceeded for a minimum of 1 hour. Chemistry sampling is stated to occur at the buoy location where the "trigger" level was exceeded (this would mean buoy #2, upstream?). First, this is considered too late in the program. Second, this section is confusing and should be re-written to clarify that chemical water quality monitoring for COPCs will occur when Turbidity trigger levels are exceeded, at the approximate timeframe and location of the observed exceedences.	COPC water quality data cannot be measured in real-time and therefore will not be used to monitoring the dredging operations. The basis of the trigger and action levels will be turbidity/TSS which can be collected and measured on a real-time basis and allow for timely corrective action. COPC water quality monitoring will be conducted as an extension of the Baseline monitoring program and will be sampled/analyzed based on the frequency associated with this program. Chemical water quality monitoring will also be conducted when the turbidity/TSS Action Level is exceeded. The sampling will be taken at the approximate location of the observed exceedance.

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	14c	Section 4.6.1.3, Resuspension Monitoring	Monitoring	Text states that in addition to real time measurements of turbidity, field measurements of turbidity, TSS will be done at buoys 2 and 3 "and at three locations transect including west, center and east channel". Please clarify: does this mean three transects of west, center and east channel locations, or just one transect of same? Three transects are recommended, as one upstream, and two downstream. Improved description is needed on the location of these transect(s) in relation to the active dredging, and how they are selected. It is anticipated that the above issues (comments 4 – 14) can be addressed in the forthcoming Appendix E, Construction Environmental Monitoring QAPP Addendum, not yet provided for agency review.	Three transects and the location of these transects for monitoring TSS and turbidity will be considered in the development of the Construction Environmental Monitoring QAPP. As the river flow during all dredging operations cannot be considered turbulent, any potential plumes will not flow across the river.
	15	Section 4.6.1.3, Resuspension Monitoring	Monitoring	The monitoring program should also include an "adaptive management" component to respond to the observed data and modify the program as needed. A flowchart/decision tree is recommended. The monitoring program serves to guide careful management of the dredging operations and to document overall project success towards attaining ARARs. These two goals should be included and clarified in Section 4 and Appendix E.	An appropriate decision management tool (e.g., flowchart/decision tree) to assess the TSS/turbidity water quality monitoring data associated with dredging/capping operations will be included in the Final Design document. It will be made clearer in Section 4 that a WQMP will be developed and utilized for the management of dredging operations and the goal of attaining ARARs.
	16	Section 4.6.1.3, Resuspension Monitoring	Monitoring	Surface water quality monitoring is also addressed in Appendix D (Section 01 45 16); this appendix should ultimately be revised to be consistent with the Final Design Workplan and Report.	The documents will be revised to be consistent.

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15	12	Section 4.6.1.3, Resuspension Monitoring	Resuspension Monitoring	The technical basis for the selected Turbidity trigger of 35 NTU and action level of 70 NTU needs to be provided in this section, or appropriately referenced. The turbidity "trigger levels" cannot be firmly established until the turbidity-TSS correlation has been developed. These levels must be set to minimize potential impacts to surface water quality outside of the mixing zone. Further, a relationship between turbidity/TSS and the concentration of the COPCs must be established to determine if the surface water quality criteria for the COPCs are being met when turbidity/TSS monitoring alone is conducted (otherwise, monitoring for turbidity alone is of limited value).	Recent TSS/turbidity data was collected as part of the LPRSA RI/FS during the water column monitoring deployments at RM 10.2 in 2009 and 2010, which is within 0.5 miles of the removal area. The Average TSS concentration was 28.9 mg/L with a Std Dev of 28.7 mg/l and the Average turbidity was 19.8 NTU with a Std Dev of 15.5 NTU Background data suggest that the TSS concentration is ~1.5 x turbidity Please note CPG's response to NJDEP Comment 5. N.J.A.C. 7:9B establishes the SW Criteria for FW2-NT as 40 mg/L for TSS and 15 NTU (30 day avg) and 50 NTU one time Max for turbidity. The 2009 and 2010 PWCM data indicate that background conditions for turbidity already exceed these standards. Therefore, for the RM 10.9 project the trigger/action levels need to be based on background + xx NTU/TSS As noted, chemical data cannot be measured in real time therefore, TSS/turbidity data will be used to monitor dredging operations. However, recent CWCM water quality data from RM 10.2 will be used to attempt to establish a relationship between turbidity/TSS and COPC. Data collected during the removal action will be used to update this relationship.
16	17	Section 4.6.1.4, page 4-12	Spill Response Plan	Please clarify the location of the "sediment stockpiling area" referred to in this section.	This text has been deleted from the report as no "sediment stockpiling area' is to be used.
17	19	Section 4.6.3, Noise	Noise	This section seems appropriate as currently described, however CPG needs to verify/coordinate with the appropriate Lyndhurst authorities on the goals/actions described.	Noted. The CPG intends to coordinate with the appropriate authorities with respect to noise related goals/objectives.
18	18	Section 6.2.4, page 6-3	Stabilization	Bench-scale testing will be required to verify that stabilizing the dredged material with Portland cement will not result in air quality emissions exceeding those in the processing facility's permits. In addition, such testing may be required by the operator of the ultimate disposal facility for the processed dredged material to verify it is physically suitable and environmentally acceptable for disposal at that facility.	Bench scale stabilization testing will be conducted by both potential stabilization facilities with newly collected sediment from RM 10.9 in order to: 1) determine the appropriate percent (by weight) portland cement addition required and 2) determine the TCLP results of the stabilized sediment. This information will be provided to the disposal facilities.
19	20	Section 7.1 – Design Criteria	to chemically isolate and sequester the transport of dissolved constituents	First paragraph, second sentence, add the term "physically" to the phrase "to chemically isolate…" and add "particulates and " to the phrase "dissolved constituents" . In addition, cap design should include/consider an upper bound condition of a 500 year flood, as already suggested by USEPA.	The second sentence will be revised as noted. The impact of designing for a 500-year flood was considered in Section 7.2.2.1.

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20	21	Section 7.1, page 7-1, Key Design Criteria, 6th bullet regarding pore water	Design COPC pore water concentrations based on the lesser of either (1) sediment-pore water partitioning calculations using the maximum RM 10.9 Removal Area post-dredge sediment concentrations or solubility limits or (2) pore water concentrations from RM 10.9 sediment and/or pore water samples are to be collected and analyzed in late 2012/early 2013.	This bullet describes several methods that may be used to determine current sediment pore water concentrations of key COPCs. To be conservative, this should be revised to read "…based on the greater of either …".	We do not believe it is necessary to modify the text as suggested. As noted in Section 7.2.1.2, "Studies have shown that estimated pore water concentrations using the EqP method can overestimate freely dissolved aqueous concentrations by several orders of magnitude (Hawthorne et al., 2006, 2007; McDonough et al., 2010)." Site-specific data will be obtained; the cap design will be appropriately conservative without having to rely on excessively conservative theoretical pore water concentrations.
21	22	Section 7.2.1, page 7-2	Chemical Containment	It is noted that additional studies are underway and proposed for the near future to obtain data needed to finalize the design of the cap. The Department may make additional comments on the proposed cap after its design has been finalized.	Comment noted. .
22	23	Section 7.2.2.1, paragraph #2, page 7-7 and Table 7-2	Table 7-2 summarizes results of armor size calculations for the 100-year return period flow and presents the maximum calculated required armor size for the areas within the removal area downstream of Station 31+00 defined by the given bottom elevation ranges. Based on these results, it is recommended that an armor layer with a D_{50} of 4.5 in. (Armor Stone Type A) be specified in areas deeper than the -3.0 ft bottom surface contour and an armor layer with a D_{50} of 2 in. (Armor Stone Type B) be specified in areas shallower than the -3.0 ft contour.	It is recommended that in depths deeper than -3.0 feet, the armor stone have a D_{50} of 4.5 inches; at depths shallower than -3.0 feet, the D_{50} should be 2 inches. However, the data in Table 7-2 suggest that, to be conservative these D_{50} values should be larger. Re-evaluation/clarification of this issue is needed.	Table 7-2 has been revised to reflect the most recent design calculations. The table is now consistent with the armor stone sizes.
23	24	Section 7.2.3, Layers	Physical Separation and Stabilization Layers	Please provide the approximate thickness of the "reactive core mat" and its expected, reliable-use timeframe.	Based on current modeling, multiple reactive core mats would have to be used to provide a sufficiently thick active layer. Multiple reactive core mats are not an economical alternative for this situation and are not being considered for implementation at this time.
24	25	Section 7.2.4, page 7-9	Design Cap Plan and Sections	The area between STA 31+00 and STA 37+50 will not be capped, but will be dredged to the depth of native material. Unless backfilled, this will leave a depression (of unknown depth) in the river bottom directly north/upstream of the capped area. Given the hydrodynamics in the Removal Area, could this result in currents and erosive forces adversely impacting the cap? If so, this concern needs to be addressed.	The depth to native material in areas upriver of Station 32+00 ranges from 0.65 ft to 2.6 ft below the existing surface. These depths are not anticipated to result in currents or erosive forces which could adversely impact the cap. The transition from the dredged area to cap at 31+00 will be backfilled with Armor Stone Type A.
25	26	Section 7.3, paragraph #2, page 7-9	less than -3 ft will have a D_{50} of 4.5 in.	Revise to read "… less than -3 ft will have a D_{50} of 2 in. The armor … greater than -3 ft will have a D_{50} of 4.5 in. But also see Comment #23.	The sentence was revised as noted.

Comment No.					
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26	28	Section 7.6.1 Placement Thickness Criteria	Placement Thickness Criteria	Based on this section, please clarify if total cap thickness is slated to be 1 ft., 1.5 ft. or 2 ft.? As currently stated, it appears to be approximately 1 ft. thick. Will there be different thicknesses depending on location in the removal area to address more severe conditions (higher contaminant levels at cap interface, higher sheer stresses)?	The minimum and average thicknesses for each of the cap layers are detailed in Section 7.6.1. The average cap thickness will be 22 inches. Armor Stone Type A layer, which is designed to resist higher shear stresses, uses larger stone and has a larger design thickness than the Type B layer. The active layer is a consistent thickness throughout the cap and was conservatively designed based on the highest contaminant levels in the underlying sediment such that there is zero breakthrough for hundreds of years.
27	27	Section 7.6.1, page 7-10	Placement Thickness Criteria	Although the intention is to place an average Armor Stone Type B layer 12 inches thick, the minimum thickness criteria is only 4.5 inches (based on Palermo et al., 1998; Section 7.2.2.1). This is a very large difference between the target average and acceptable minimum thicknesses. Therefore, it is recommended that the Armor Stone Type B layer thickness minimum criteria be increased. This would also be more consistent with the placement tolerance and accuracy requirements specified in Section 7.6.2.	The minimum thickness has been set as the design thickness. The design thickness of Armor Stone Type B is 4.5 in., which includes a 50% increase in thickness for underwater placement. The average Armor Stone Type B thickness of 12 inches is conservative considering the design thickness and was set at 12 inches for ease of construction. The use of a conservative average thickness is not a justification for increasing the design (or minimum) thickness.
28	29	Section 7.8.1, paragraph #3, page 7-12	The water quality monitoring requirements established for the dredging operations will also be followed during the capping activities. As with dredging, BMPs and control measures will be used during cap placement to further minimize any increased turbidity.	The specific BMPs to be used to control sediment resuspension during the capping operation should be identified. In addition, if the monitoring "trigger levels" are exceeded during the capping operation, the additional BMPs to be implemented should be specified.	Specific BMPs for controlling sediment resuspension during capping operations will be identified. The main BMPs for controlling sediment resuspension or turbidity generated from capping materials placement are utilizing appropriate placement techniques (e.g., broadcast spreading) and washing the sand material to remove fines prior to placement.
29	30	Section 7.9 Project and Community Health and Safety	Project and Community Health and Safety	As referenced in Section 7.9, a Community Health and Safety Plan (CHSP) will be developed. An outline of the CHSP was provided in Appendix G. Please note that RM 10.9 sediments have elevated levels of several toxic contaminants; therefore, perimeter air monitoring during dredging activities needs to be performed for key project contaminants 2,3,7,8-TCDD, total PCBs, and Mercury. Also, hydrogen sulfide monitoring is required to address potential odor concerns.	The comment refers to "perimeter air monitoring during dredging activities." Section 7.9 is relevant only to capping. The CPG does not believe that there is a need for air monitoring during capping activities as the underlying sediment are not being disturbed, but are being physically and chemically isolated during cap placement. Potential emissions during dredging do not exceed NJDEP air monitoring thresholds. However, the Community HSP will include air monitoring as a precaution.
30	31a	Section 8.2, page 8-1	Regulatory Guidelines	Since it will be the processed (i.e. stabilized) dredged material (PDM) that will be transported to and disposed of at an out-of-State facility, bench-scale testing of the PDM should be conducted to provide the data needed by the operator of the facility. The owner/operator of this out-of-State facility must certify to the Department that the PDM is physically suitable and environmentally acceptable for disposal at the facility.	The out-of-state disposal facilities have provided the required acceptance criteria for their respective facilities. Once the final disposal facility is selected the requested certification will be provided to the USEPA and the Department.

Comment No.					
Word	**NJDEP**	**Location**	**Text Highlighted**	**Comment**	**Response**
	31b	Section 8.2, page 8-1	Regulatory Guidelines	In addition, the operator of the out-of-State facility may require periodic testing of the PDM as it is produced for "quality assurance" purposes to verify it is suitable for disposal.	The selected disposal facility will provide the necessary testing required for QA purposes. They are required to have an on-site presence during stabilization activities and to accept the PDM for transportation at that site.
	31c	Section 8.2, page 8-1	Regulatory Guidelines	Similar testing may be required by the operator of the wastewater treatment facility for the barge decant water. Likewise, the owner/operator of the wastewater treatment facility must certify to the Department that the decant water is acceptable for disposal at the facility.	See responses to Comments #31 a and b.
31	32	Section 8.2, Regulatory Guidelines, page 8-2	Sampling locations	For the described bulk sample locations (selected by review of average COPCs concentrations in the top 0 – 3.5 ft of sediment across the mudflat) please identify the selected core locations and sample intervals via the described analysis in this section, and/or reference on a site diagram. If this was already provided, it should be referenced in this section.	The disposal facilities have indicated that in order to accept the sediment on an in-situ basis the project must run TCLP tests on every 1,000 tons of in-situ sediment. Therefore, additional sampling will be conducted in February 2013 to collect these data.
32	34	Table 8-1 Composite Waste Characterization Profile	TABLE 8-1	For waste characterization purposes using TCLP, it is noted that dioxin, a key driver of this removal action, is not included. Presumably, this is because comparable criteria do not exist, and because, for the purposes of this project, the USEPA has determined that Passaic River dioxin-contaminated sediment is not a listed waste under RCRA. However, since dioxin is a key driver for the project, whole sample analysis/reporting for this parameter is considered necessary for waste characterization purposes and should have been performed/presented in this section. Section 8.2, page 8-4 notes that a QAPP addendum is being developed for additional waste profiling. This comment should be addressed in the forthcoming QAPP. It's possible that existing data may be used for this purpose (sediment evaluation described in Section 8.2, page 8-2) if the existing sampling and evaluation approach is acceptable to waste receiving facilities.	The collection and analysis of nearly 100 discrete sediment samples from within the Removal Area (0-2 ft interval) has been deemed sufficient by the potential disposal facilities to characterize dioxin/furan sediment concentrations for purposes of disposal.
33	33	Section 8.3, page 8-4	Transportation Options	Potential impacts of the transport of the processed dredged material to its final disposal location must be minimized through the development and implementation of appropriate BMPs.	Agreed. The design document will be revised to reflect this.
34	—	Appendix B, Sect 7.4 - Analysis of Engineering Cap Thickness	Appendix B	Appendix B should be reviewed by an engineer familiar with subaqueous cap durability; the Site Remediation Program defers to the USACE and USEPA for this aspect of the design. Separately, hydraulic calculations should be provided of the engineered cap with respect to compliance with The Flood Hazard Area (FHA) Control act rules, New Jersey Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 et seq.	Appendix B provides the basis for the statistical analysis of the cap thickness data. Post-placement measurements of the engineered cap will be taken to demonstrate achievement of the applied material specifications. The CPG is discussing with NJDEP about acceptable methods to demonstrate that the proposed cap will not increase flood potential in the area.
	Appendix D Comments				

Comment No. Word	NJDEP	Location	Text Highlighted	Comment	Response
35	1	Section 01 45 16, Part 1 – 1.01-B, page 13	Appendix D	This states that both the Contractor and CH2M Hill will implement water quality monitoring programs. The scope of these two programs should be specified and clearly delineated, and how they relate to/are consistent with the surface water quality monitoring program presented in the Pre-Final Design Report explained.	Separate water quality monitoring plans for construction will be developed by the CPG and the Dredging/Capping Contractor. The requested information will be provided in both of these plans.
36	2	Section 01 51 01 – Shoreside Support Facilities, page 41	Appendix D	If this section addresses the use of the construction staging area located in the riverside park, see Pre-Final Design Report Comment #8 – revise this section of Appendix D as needed.	The Bergen County Riverside Park and the Lyndhurst municipal recreation upland areas are no longer being considered for use during the project and the documents will be revised accordingly.
37	3	Section 01 91 14, Part 1 – 1.01, paragraph #3, page 50	Appendix D	The operator of the disposal facility for the PDM may have additional characteristics/requirements that the PDM must meet.	The potential disposal facilities have been contacted and they have indicated that TCLP data collected on the in-situ sediment (1 TCLP test for every 1,000 tons of sediment) are sufficient for acceptance. We have also requested as part of the Request for Proposal that the disposal facilities provide any additional testing requirements. This information will be incorporated into the Final Design as appropriate.
38	4	Section 01 91 14, Part 2 – 2.01, paragraph #2, page 51 and Part 3 – 3.02-E, page 56	Appendix D	The Contractor's mix design, reagents, etc. must also be approved by, and specified in, the AUD issued by the Department for the dredged material processing facility.	Agreed. The documents will be revised accordingly and the NJDEP will be provided the information necessary to issue an AUD.
39	5	Section 01 91 14, Part 2 – 2.01, paragraph #42, page 51 and Part 3 – 3.02-D, page 56	Appendix D	see Comment #3	See response to Comment #3.
40	6	Section 01 91 14, Part 2 – 2.02-A-5-j, page 54	Appendix D	The QAPP should be developed in consultation with the operator of the disposal facility for the PDM and the wastewater treatment facility; also, see Part 3 – 3.02-F, page 56.	Noted
41	7	Section 02 32 00, Part 2 – 2.02-D, page 63	Appendix D	This specifies an 18-inch thick armor layer, not 12-inches (see Pre-Final Design Report Figure 7-2). Clarification/correction needed.	The documents will be revised to be consistent.
42	8	Section 02 32 00, Part 2 – 2.05-A, page 64	Appendix D	This requires chemical testing of the sand to meet USEPA requirements; the Department may also have testing requirements for the sand.	If the Department has testing requirements for the sand which are in addition to those required by the USEPA, then the CPG requests that they be provided at its earliest opportunity, so that CPG can review them and include them in the Final Design documents.

Comment No.					
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43	9	Section 31 23 24, Part 2 – 2.03, page 80	Appendix D	The barges used to transport the dredged material should have a solid bottom/be sealed (i.e. barges capable of bottom dumping should not be used). Please provide details of the controls that are in place to keep the sediment and water from escaping/discharging from the barge during dredging operation and movement of the barge on the Passaic River.	The specification will be revised to indicate that bottom dumping barges are not used unless they have been certified to be sealed. Prior to mobilization to the site all marine vessels are required to be surveyed in order to confirm they are suitable for use on the project. This includes the barges which will be inspected for water tightness.
44	10	Section 31 23 24, Part 2 – 2.03, page 81	Appendix D	Additional specifications for the installation, operation, monitoring, and removal/movement of the silt curtain should be included; see Pre-Final Design Report Comment #8.	An additional technical specification for silt curtains will be included in the Final Design Report.
45	11	Section 31 23 24, Part 3 – 3.01-B, page 82	Appendix D	Will the park be impacted by any of the needed shoreline vegetation removal operations? If so, restoration should be described.	The Riverside Park properties (County Park and Township Recreation Area) will not be utilized during the project. All work is to be conducted on the water adjacent to the park. The only vegetation removal operations anticipated may be the trimming of tree branches on the water side of the park in order to provide safe access for the dredge bucket. No restoration is anticipated as a result of this action.

Comment No. Word	NJDEP	Location	Text Highlighted	Comment	Response
	Appendix K Comments				
46	—	[General Comments]	Appendix K	The draft Appendix K is incomplete; thus, it is not possible to evaluate the proposed plan. Not all of the referenced figures and appendices are included. In addition, the descriptions of the proposed cap design in Appendix K are different than those in the Pre-Final Design Report (Figure 7-2; for example, see Comment CHECK). The "final" version of Appendix K must be revised to be consistent with the Final (100%) Design Report. Comments are provided below. This document should be additionally based on technical guidance provided in "Contaminated Sediment Remediation Guidance for Hazardous Waste Sites", USEPA 2005 and any related updates. Chapter 8 is directly applicable and should be used / referenced for this project. Much of the detailed information for this plan has not yet been presented, because Appendices A – D of the LTMM document have not yet been submitted. An important aspect of long term monitoring is the ability to compare post remedial action/construction data to pre –remedial conditions, be it, sediment quality, pore water quality or other measures useful for determining success for the remedial action. This document should therefore more clearly link the TCRA remedial action objectives with both current conditions and specific long term measurement goals to determine success over time. <u>Assessment of Cap boundaries</u> - Either in this document or elsewhere in TCRA Design documents, information is needed on how the edges of the engineered cap and armored areas will be protected from severe erosion. This is important because the areas outside of the designated cap area still contain significant sediment contamination at depth that must not become exposed due to nearby, changed physical conditions.	The appendix will be revised to be consistent with the Final Design document.
47	1	Section 1.1, page 1-1	Appendix K	This section states "a small portion along the shore … cannot be capped …" The spatial extent of this area should be described and depicted on a site figure. This should include the COPC concentrations in the surface and near surface (.5 – 1.5 ft.) sediment to remain in this uncapped area. Briefly describe, or reference to a later section, how this area, which cannot be capped due to slope instability, will be appropriately addressed. Clarification is needed as to whether this is the area north of STA 31+00 that will be dredged to native material noted in Section 4.2.1, page 4-1 of the Pre-Final Design Report.	The text will be revised to include a discussion of the uncapped area.

Comment No.					
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48	2	Section 2.1, page 2-1, paragraph #2	Appendix K	This section states the cap armor will consist of stone from 4 to 7 inches in diameter. However, Figure 7-2 in the Pre-Final Design Report shows, and the NJDEP Response to Comment document (response III-18) states, that the stone will be 2 to 4 inches in diameter.	The text will be revised to be consistent with the Final Design Document
49	3	Section 3.1, page 3-1	Appendix K	The remedial objectives of the Removal Action should be stated, with specific monitoring objectives developed to evaluate the success of the Remedial Action in meeting its objectives. The monitoring objectives should be stated in quantitative terms whenever possible.	The text will be revised accordingly.
50	4	Section 3.1.1, Physical Performance Monitoring, page 3-1	Appendix K	In addition to conducting physical performance monitoring for stresses mentioned in this section (high flows, ice scour, etc.), this monitoring should be done to monitor cap thickness and integrity in response to regular tidal cycles overtime.	The physical performance monitoring of the cap will monitor the physical integrity of the cap – especially cap thickness. The cap has been designed to resist stresses associated with 100- year flow events. . Physical stresses associated with regular tidal cycles will have a negligible impact on the cap. Any stresses that may have significant impacts on the cap's physical integrity will be noted as the result of the monitoring program.

Comment No.					
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51	5	Section 3.1.2, page 3-1	Appendix K	Given the nature of the armor layer (2-4 inch stone) any "pore water" will be more reflective of the overlying water column than of advection/diffusion from the underlying cap and contaminated sediment. In addition, the settlement of (contaminated) suspended solids from the water column on/into the armor layer over time further complicates the chemical monitoring of the armor layer for evidence of satisfactory cap functionality. Also see Comment #... Therefore, it does not appear useful to monitor the "pore water" in the armor layer. However, since chemical monitoring is desired, it is recommended that the cap design be modified to facilitate such monitoring. The existing cap design (see Per-Final Design Report Figure 7-2) is schematically shown in (a) below. To conduct chemical monitoring of the cap, it is recommended that the cap design be modified to something similar to that shown in (b). Chemical monitoring of the cap could be conducted in the upper sand layer in (b). (a) Existing Armor layer (12 inches) ----------geotextile Active layer Sand layer (6 inches) Sediment (b)Recommended Armor layer (10 inches? - physical/erosion monitoring) ---------- geotextile Sand layer (4 – 6 inches? - chemical monitoring) Active layer Sand layer (4 – 6 inches?) Sediment	The cap's armor layer will contain a graded mixture of sizes. The stone size of 4.5 and 2.0 inches for Armor Stone Type A and B, respectively, is given as the D_{50}. The D_{50} means 50 percent of the rock is finer by weight than the D_{50} size. The purpose of the monitoring program is to determine whether there is chemical breakthrough and if the cap is being re-contaminated. The CPG is considering ways to monitor the cap below the armor layer.

Comment No.					
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52	6	Sections 3.2 and 3.2.1, page 3-1	Appendix K	Given the RM 10.9 physical conditions, routine physical monitoring should be performed annually at a minimum, not once every 5 years as currently proposed. If event –driven monitoring occurs within a similar time period (within 2 months) as the scheduled, designated routine monitoring timeframe, the latter could be replaced by the event driven monitoring. It is recommended that monitoring be conducted on the following schedule: – Routine Physical Monitoring: This should be performed once per year (in late spring) for the first 5 years after project implementation; then once every 3-5 years (depending on the results of the first 5 years of monitoring); – Routine Chemical Monitoring: This should be performed within 1 year of installation and thereafter every 5 years up to 30 years, not at just the 5, 30 and 100 year post -construction marks. At the 30 year mark, a new monitoring schedule may be developed based on environmental condition of the capped area and evaluation of monitoring program to date. This should include consideration of any new/improved cap monitoring methods. – Event-based Monitoring: The triggers for this monitoring need to be specified. If this monitoring indicates that cap functionality has been potentially compromised, the schedules for the Routine Physical and Chemical Monitoring should be “reset”.	The cap is designed to resist at least the forces of a 100-year flood. Given the relatively unremarkable physical conditions at RM 10.9, routine monitoring that begins one year after cap construction in combination with event-based monitoring is a responsible, conservative monitoring program. The cap is designed to prevent chemical breakthrough indefinitely (i.e., several hundreds of years). In the context of this extremely long period of time, beginning the chemical monitoring within the first year of installation and every 5 years for the first 30 years does not seem justified. The triggers for the event-based monitoring are the flood flows given in Table 3-1.
53	7a	Section 3.2.2- Event-Based Monitoring	Appendix K	The triggers need to be specified for the Event-based Monitoring; i.e. what is the “designated river flow event” that will trigger this monitoring – the 5-year recurrence flow listed in Table 3-1? The 10-year flow? What type of river construction activities will trigger this monitoring?	The triggers for the event-based monitoring are the flood flows given in Table 3-1. Construction events that would trigger additional event-based monitoring include utility construction that physically disrupts the cap.
	7b	Section 3.2.2- Event-Based Monitoring	Appendix K	This section should describe the monitoring techniques to be used (only bathymetry survey mentioned).	Section 4 discusses bathymetric surveys and other techniques such as poling and probing.
	7c	Section 3.2.2- Event-Based Monitoring	Appendix K	As proposed, event- based monitoring will be performed within “6 months” following the observed event. This is not acceptable. Such monitoring should be performed within 1 – 2 months of designated events, using pre-approved monitoring and reporting techniques.	The text will be revised as suggested.

Comment No. Word	NJDEP	Location	Text Highlighted	Comment	Response
	7d	Section 3.2.2- Event-Based Monitoring	Appendix K	Bathymetry surveys will be performed for each event designated per Table 3-1 (5, 10, 25, 50 and 100 yr flow return events) and "additional" cap integrity monitoring is slated to occur only following 100 year flood events. Given RM 10.9 conditions, these "additional" monitoring methods need to be described and should be implemented for event - based flows of 10, 25 and 50 year return events that occur within the first 30 years of monitoring. This will develop a cap integrity track record in relation to these possibly more frequent, but less severe flow events.	The "additional" monitoring events are those associated with each additional 100-year flood or greater events. There are no additional monitoring methods.
	7e	Section 3.2.2- Event-Based Monitoring	Appendix K	This section further states that due to concerns with cap consolidation and possible mis-interpretation as erosion, the "underlying source of the elevation change (…..) must be determined prior to initiating additional monitoring". However, it may not be possible to differentiate between these two "sources" until additional monitoring is performed. Since use of bathymetry alone to monitor cap functionality may not be completely reliable, other measurement lines of evidence need to be used/described in this report. In addition, whenever a pre-designated sediment bed elevation change is noted (regardless of reason), a minimum set of pre-designated monitoring techniques should be performed with the primary purpose of determining cap integrity relative to capping goals of contaminant containment and separation from the rest of the river.	Agreed. The text will be revised appropriately
54	8	Section 3.3, page 3-1	Appendix K	This draft version of Appendix K does not include the referenced Appendices A-C. Therefore, it is not possible to review the proposed Data Quality Objectives (DQOs) for the monitoring program. However, irrespective of the information provided in these appendices, the DQOs for the monitoring program should be stated in this section of the document.	Agreed. The text will be revised appropriately.
55	9	Section 4.1, page 3-1	Appendix K	This section indicates that the cap will consolidate at least 9 inches in depth – this is almost 40% of the original 24-inch cap thickness. Since it could be expected that there will be minimal consolidation of the armor and active layers, and the sand layer is only 6 inches thick, this implies that most of this consolidation will be the result of compacting the underlying contaminated sediment; this could result in slope instabilities and/or the enhanced advection/diffusion of groundwater into the cap. Also, this large change in depth (relative to the cap thickness) suggests that bathymetric surveys will be of limited use in evaluating the stability and functionality of the cap.	The estimate in the text is incorrect and based upon an earlier cap design. The text will be revised to read "…will consolidate at least 4 inches in depth…" Virtually all of the consolidation will occur in the underlying sediment. Bathymetric surveys have proven to be effective in evaluating the physical integrity of the cap even where the total consolidation has been on the order of 9 to 12 inches.

Comment No.					
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56	10	Section 4.2, page 4-1	Appendix K	Monitoring of the armor layer should focus on evaluating the thickness of the cap, using visual means and physical probing measurements. As noted above, use of bathymetric data to monitor the cap is problematical. Poling should be conducted to penetrate through the armor layer to the underlying geotextile, thus determining the thickness of the armor layer	As noted above, bathymetric surveys have proven to be effective in evaluating the physical integrity of caps at other sites. Poling through the armor layer has been unsuccessful at other sites (e.g. Lower Fox River).
57	11a	Section 5, Chemical Performance Monitoring, page 5-1	Appendix K	This section provides an overview of proposed pore water collection and analysis to determine cap effectiveness (see comment … above).	Comment Noted.
	11b	Section 5, Chemical Performance Monitoring, page 5-1	Appendix K	Missing is the important link/comparison to pre-remedial conditions, such as the pore water data to be collected per Pre-Final Design Addendum D. This link needs to be incorporated through program objectives and related sampling, analytical and evaluation methods.	Pre-remediation pore water concentrations are being used to design the active layer of sediment cap, but will not be directly employed for comparative purposes during the long term monitoring. Rather, pore water concentrations above the active layer of the sediment cap will be monitored for chemical breakthrough as part of the long term monitoring program. The elevated pre-remediation pore water concentrations are not relevant to the long term monitoring as lower concentrations, such as surface water concentrations, provide a more conservative criterion to establish chemical breakthrough.
	11c	Section 5, Chemical Performance Monitoring, page 5-1	Appendix K	In the current plan, Phenanthrene and mercury are the analytes chosen for this purpose. However, for initial monitoring, and for comparison to pre-remedial conditions, collection and analysis of samples for 2,3,7,8-TCDD and total PCBs is also recommended. If Phenanthrene is found to be a reliable indicator parameter for 2,3,7,8-TCDD and total PCBs, consideration can be given to dropping these contaminants in future long term monitoring.	Pore water concentrations above the active layer of the sediment cap will be monitored for chemical breakthrough as part of the long term monitoring program. For this reason, strongly sorbing organic constituents such as 2,3,7,8-TCDD and PCBs are not ideal candidates for breakthrough monitoring. Phenanthrene is much more mobile than these two constituents and therefore was selected for the long term monitoring of transport through the cap.
58	12	Section 5.1, page 5-1	Appendix K	The concentrations of phenanthrene and mercury in the contaminated sediment underlying the cap should be compared to that in current surface water quality (needs to be determined) and nearby surface sediment of the Passaic River. In order to use these contaminants as indicators of cap functionality, their concentrations must be greater than those in the ambient environment. Additional information should be provided on how well the solubility of phenanthrene compares to that of the lower molecular weight PCBs (unless these are not prevalent in the TCRA).	Agreed. The concentrations of phenanthrene and mercury in the pore water underlying the cap should be compared to that in the surface water to ensure the pore water concentrations are greater for purposes of long term monitoring. The sediment concentrations have already been established as being elevated with respect to areas outside the Removal Area. A review of the data will be undertaken to compare the solubility of phenanthrene to any prevalent lower molecular weight PCB congeners in the Removal Area.
59	13	Section 5.2, page 5-1	Appendix K	Please describe how the length of time needed for the SPMEs and peepers to reach equilibrium with the surrounding pore water will be determined. Removal of the armor layer to install these devices will significantly disrupt any “pore water” present, probably rendering the data collected of limited applicability for its intended use.	The CPG will continue to develop an SOP for the installation and equilibration of these samplers to ensure data of sufficient quality are obtained.

Comment No.					
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60	14	Section 6.1, Cap Maintenance Trigger, page 6-1	Appendix K	The risk based levels to be used for determining chemical breakthrough need to be presented with appropriate rationale and/or technical reference. The current proposal of physical trigger is given as "5 percent of the total cap area eroded at least 50 percent through the armor layer". Other scenarios should be considered, along with use of professional judgment, to be more proactive, rather than only initiating cap maintenance under 1 set of physical change conditions. This section therefore be expanded; a detailed cap maintenance decision-tree should be developed with a series of potential trigger criteria and response actions identified.	The objective of this removal action is "to reduce exposure of receptors to, and prevent potentially significant migration of contaminants from [the removal area]". The proposed plan will ensure that the risk of direct exposure is maintained and that COPCs beneath the cap are controlled from entering the bioactive zone of the cap following completion of the dredging/capping works.
61	15	Section 6.2, page 6-1, Bullet #3	Appendix K	Please describe the kind of institutional controls that could be implemented.	The final design documents will be revised to identify the institutional controls that might be implemented to address specific situations. An example institutional control would be prohibiting the construction of in-water structures near the cap
62	16	Section 6.2, page 6-1, Bullet #5	Appendix K	Increasing monitoring is not an appropriate "maintenance" reaction to a cap maintenance trigger. However, if the need to perform cap maintenance is identified, Event-based Monitoring should be implemented.	"Increasing monitoring" is an appropriate operational response action to one set of triggers. Maintenance will occur when monitoring indicates it is needed.

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Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
1	53	Figure 4-8	Water Quality Monitoring Location	Monitoring location quantities, types, and locations shown on the figure do not appear to be consistent with the design report. Please clarify and revise, as necessary.	The figures, drawings and text will be revised to be consistent.
2	67	Figure 7-2	7-2 Typical Cap Sections	The Type A armor layer thickness and size is not consistent with the design report or the specification. Please clarify and revise, as necessary.	Figure 7-2 is correct. The other documents will be revised to be consistent with the figure.
3	1	Page 1-1	This Pre-Final describes the removal action selected by the USEPA in the Action MemorandumEnforcement dated June 18, 2012 (USEPA, 2012b).	Second paragraph, last line: The date of the Action Memorandum/Enforcement is May 21, 2012. This was correct in the 30% design but now appears incorrectly as June 18, 2012. Third paragraph, first line: Should say "This Pre-Final Design Report is based on …."	The text will be revised accordingly.
4	2	Page 1-2	The Action Memorandum/Enforcement (USEPA, 2012b) requires the removal of the highest near-surface and shallow subsurface concentrations of the entire deposit, and that the RM 10.9 Removal Area to include that area that is exposed at low tide.	The first sentence, which describes sediments that will be removed, is still missing something. Here is suggested change: "The Action Memorandum/Enforcement (USEPA, 2012b) requires the removal of the highest near-surface and shallow subsurface concentrations of the entire deposit, and defines ~~that~~ the RM 10.9 Removal Area to include that area that is exposed at low tide."	The text will be revised accordingly.
5	3	Page 2-1, Second paragraph, second line	removal or response action conducted entirely onsite, where such removal action is selected and carried out in compliance with Section 121. However, pursuant to 40 CFR Section 300.415(j), the removal action will, to the extent practicable considering the exigencies of the situation, attain substantive compliance with Applicable or Relevant and Appropriate Requirements (ARARs) under federal environmental or state environmental or facility siting laws.	Please further revise the language in this paragraph as follows, to remove reference to substantive compliance as that concept is incorporated in the ARAR concept: However, pursuant to 40 CFR Section 300.415(j), the removal action shall ~~will~~, to the extent practicable considering the exigencies of the situation, attain ~~substantive compliance with~~ Applicable or Relevant and Appropriate Requirements (ARARs) under federal environmental or state environmental or facility siting laws.	The text will be revised accordingly.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
6	4	Page 2-3, Section 2.2, Last paragraph	Dredged material in New Jersey is exempt from being a solid waste when it is regulated under certain statutes, such as the New Jersey Water Pollution Control Act, Waterfront Development Law, Clean Water Act, and Federal Coastal Zone Management Act (CZMA). Contaminated environmental media (e.g., sediment) are not hazardous waste but can become subject to regulation under the Resource Conservation and Recovery Act (RCRA) if they "contain" hazardous waste. USEPA generally considers contaminated environmental media to contain hazardous waste (1) when they exhibit a characteristic of hazardous waste or (2) when they are contaminated with concentrations of hazardous constituents from listed hazardous waste that are above health-based levels. Dredged material that is subject to the requirements of a permit that has been issued under 404 of the Federal Water Pollution Control Act (33 U.S.C.1344) or section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413) is not a hazardous waste. Offsite sediment-processing and disposal facilities must comply with all administrative and substantive aspects of the regulations, including their own permit requirements, and may impose constraints prior to accepting the sediment.	This paragraph may overstate the CWA 404 exemption, which will not apply once the material is beyond the reach of the 404 permit (e.g., being sent to off-site disposal location). Suggested rewrite: Dredged material that is subject to the requirements of a permit that has been issued under 404 of the Federal Water Pollution Control Act (33 U.S.C.1344) or section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413) is not a hazardous waste. Similarly, dredged material in New Jersey is exempt from being a solid waste when it is regulated under certain statutes, such as the New Jersey Water Pollution Control Act, Waterfront Development Law, Clean Water Act, and Federal Coastal Zone Management Act (CZMA). Contaminated environmental media (e.g., sediment) are not hazardous waste but can become subject to regulation under the Resource Conservation and Recovery Act (RCRA) if they "contain" hazardous waste. USEPA generally considers contaminated environmental media to contain hazardous waste (1) when they exhibit a characteristic of hazardous waste or (2) when they are contaminated with concentrations of hazardous constituents from listed hazardous waste that are above health-based levels. Offsite sediment-processing and disposal facilities must comply with all administrative and substantive aspects of the regulations, including their own permit requirements, and may impose constraints prior to accepting the sediment.	The text will be revised accordingly.
7	5	Table 2-2	TABLE 2-2	Page 3 of table. We suggest the following change to the TSCA entry: Applicable. Environmental media containing PCBs may be considered bulk PCB remediation waste. TSCA provides provisions for management of bulk PCB remediation waste at concentrations <50 ppm; certain substantive requirements may be applicable, or approvals from the TSCA regional coordinator may be appropriate. NJDEP was consulted on and agrees with the RM 10.9 Removal Action authorized by the Action Memo. No additional substantive requirements are proposed.	The text will be revised accordingly.
				Page 4 of table, entry for Subtitle C: Relevant and appropriate. Dredged material that is subject to the requirements of a permit that has been issued under 404 of the Federal Water Pollution Control Act (33 U.S.C.1344) or section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413) is not a hazardous waste. NJ has	The text will be revised accordingly.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
				delegated authority; refer to the N.J.A.C. 7:26G Hazardous Waste. All administrative and substantive requirements of regulations will be followed for offsite activities. If contaminated sediments exhibit characteristics of hazardous waste (e.g., fail TCLP), they must be managed as a hazardous waste (e.g., treat to stabilize the contaminants and get rid of free liquids) prior to upland disposal.	The text will be revised accordingly.
				Page 4 of the table, third entry: Same as comment above: the language that cites to the WQC in discussion relating to LDR should be replaced with the following reference: Dredged material that is subject to the requirements of a permit that has been issued under 404 of the Federal Water Pollution Control Act (33 U.S.C.1344) or section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413) is not a hazardous waste.	The text will be revised accordingly.
				Page 5 of table, first entry, please revise to: Not an ARAR for this removal action, as no additional delineation testing of sediment is required. NJDEP was consulted on and agrees with has endorsed the Action Memo for the RM 10.9 Removal Action authorized by the Action Memo. The design will state that bathymetric measurements to confirm the depth of sediment removed, and depth of cap will occur during implementation.	The text will be revised accordingly.
				Page 5 of table, entry for NJ Dredging Manual: Not promulgated, technical manual prepared pursuant to N.J.S.A. 13:1D-111 to 1D-113 to provide guidance.	The text will be revised accordingly.
				Page 6 of table, entry for Noise Control regulations, last line: The final design of dredging activities addresses compliance with this regulation.	

Comment No.					
Word	**EPA**	**Location**	**Text Highlighted**	**Comment**	**Response**
8	6	Table 2-3	TABLE 2-3	Entries for Endangered Species Act and NHPA: In 30% Design, these were identified as applicable, not relevant and appropriate. We agree with that designation. Why were these changed to relevant and appropriate? Page 2 of 3, top entry: Note that there may be additional comments on this after consultation with FWS.	The text was changed to relevant and appropriate because upon further evaluation, there is no indication that endangered species or historic resources are present in the project area; therefore, it is considered not applicable. However, consultations will be done to confirm our information, so the text will be returned to applicable, not relevant and appropriate.
9	7	Tables 2-4 and 2-5	TABLE 2-4	Please clarify whether the requirements identified in these tables apply to the on-site removal activities, or the off-site stabilization facility.	The requirements identified in Table 2-4 apply to the on-site removal activities. The text will be revised to indicate this.
10	8	Page 3-1, Section 3.2	Geology	Did the geotechnical investigation confirm that the underlying sediments have the strength to hold the proposed cap? If the proposed cap were to have a higher specific gravity than the unconsolidated sediments, this could lead to cap failure. Please clarify and revise, as necessary (and where appropriate).	The geotechnical investigation data was not used as it was collected to support the potential sheet pile wall design and was not applicable to the cap design. The weight of the cap and armor will be only slightly (<10%) more than the sediment removed, resulting in a relatively small increase in stress in the underlying sediment. Consolidation of this underlying sediment is expected to be slight (i.e., on the order of a few inches). The small increase in stress on the underlying sediment due to the cap will be more than offset by the strength of the geotextile, which provides a bridging layer for the armor. Thus, the sediment will have sufficient bearing capacity to support the cap. The placement of the cap's armor will be controlled to protect the underlying layers during construction.
11	9	Page 3-4, Section 3.6	Climate Conditions	A contingency plan to protect both the operation and the surrounding area should be prepared in case of significant storm events.	A Contingency Plan will be prepared for the project which will address actions to be taken in the event of a significant storm. This plan will be included as part of the Construction Management Plan
12	10	Page 3-5, Section 3.7	Bridges	All navigation routes should be evaluated and tested prior to finalizing the Design.	The navigation route from RM 10.9 to the mouth of the river has been indicated on the drawings. In addition, the owners/operators of each of the constraining bridges were contacted and information with respect to notifications and planned maintenance is included in a table provided in Appendix B. As the selection of the dredging/stabilization/capping contractor will not occur until after the Final Design has been submitted and mobilization of equipment is not expected until June 2013, testing of this route was not anticipated to be conducted prior to the Final Design being submitted.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
13	11	Table 3-2	TABLE 3-2	Please confirm that specific gravity refers to the solid portion of sample only. Please add bulk density and bulk dry density to this table to facilitate calculation of sediment mass and contaminant mass removed based on volume (and concentration for contaminants), respectively.	The specific gravity provided in Table 3-2 refers to the solid portion of the sediment. The bulk density and dry bulk density will be added to the table.
14	12	Table 3-4	TABLE 3-4	Please add units to clearance columns (assumed feet).	The text will be revised accordingly.
15	13	Page 4-1, Section 4.2.2	Debris	What contingency is in place in the event the excavator is unable to remove the proposed 4-inch debris? Please clarify and revise, as necessary.	Given the relatively shallow dredge depth of 2 feet it is not anticipated that a significant amount of larger debris will be encountered and the contractor should be able to handle smaller debris with the environmental bucket. However, debris which is determined to extend beyond the removal depth (i.e., bedrock) may be left in place following evaluation of the extent of embedment. In addition the rip rap associated with the Township of Lyndhurst's pump station will not be disturbed. The contractor is required to address debris removal as part of their Dredging and Operations Plan.
16	14	Page 4-1, Section 4.2.2	5 percent (by volume)	Please describe how the assumption of 5% by volume of debris containing dredged material was derived.	Assumption is based on visual observations and what was assumed for the Phase 1 removal action.
17	15	Page 4-2, Section 4.2.3	Utilities	Please describe how delineated utilities will be marked on the river.	Based on conversations with United Water, a 50 foot offset will be established for the pipelines which supply Jersey City. The coordinates of this offset boundary will be provided on the design drawings. The wire cable identified does not appear to be associated with a utility or specific use and will be removed unless determined otherwise through additional discussions with the Township.
18	16	Page 4-2, Section 4.3.1.1	Dredge	What is the minimum draft required of the shallow draft vessels?	The minimum draft will vary by marine vessel, thus a range has been provided. The dredge barge may only require 2.5 feet but the material barges could require up to 4 feet depending on the size used.
19	17	Page 4-2, Section 4.3.1.1	spud barge	How many moves of the spud barge are anticipated to remove the targeted sediment? Please revise the document, if necessary.	3 to 4 spud barge movements per day are anticipated to remove the targeted sediment. The document will be revised to include this information.
20	18	Page 4-2, Section 4.3.1.2	Environmental Bucket	Level cuts can only be precisely made on level surfaces. Much of the proposed dredge area is sloped and some is severely sloped. Please clarify how these cuts will be made and revise the text as necessary.	The dredging will be conducted with an environmental bucket capable of making level cuts. These cuts will be box cuts and yes the slope will impact the extent of over dredging, but will be not impact the required removal of sediment from these areas. The majority of the removal area has a slope of 3H:1V or less with only areas upriver of Station 32+00 having slopes greater than 3H:1V. The document will be revised to include a discussion of the box cut.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
	19	Page 4-2, Section 4.3.1.2	Environmental Bucket	Have the results of the geotechnical testing that was conducted on RM 10.9 been incorporated into the design, and when will they be available for review? The text indicates that the sediment will be removed in two to three lifts. After the first lift, the sediment may shift, and the impacts of this should be evaluated prior to finalizing the design.	The geotechnical investigation data was collected at depth to support the potential sheet pile wall design and was therefore not applicable to the dredge design. The sediment will be removed to the target elevation prior to the dredge plant moving to a new location. So the sediment will be removed in one pass which consists of 2-3 lifts. Therefore, sediment shifting will not impact the project with the exception of the perimeter of the removal area. These areas will be identified during the final bathymetric survey and based on this survey additional dredging may be required.
21	20	Page 4-2, Section 4.3.1.2	approximately 31 percent	It is anticipated that the volume of water will increase with each lift as the sediments become disturbed. Please clarify the estimated 31 percent and revise the text as necessary.	The volume of water may increase at the surface of the sediment due to the removal of sediment but this increase will not be representative of the entire next lift. Therefore, variations in the volume of water is based on the thickness of each lift as shown in the Excess Water calculation are considered appropriate for the estimation of the average excess water of 31%.
22	21	Page 4-2, Section 4.3.1.3	Barges	Please describe if the river's seasonal low water levels have also been accounted in anticipated river water depth assumptions, and revise as necessary.	The tidal influences have been considered in the design.
	22	Page 4-2, Section 4.3.1.3	Barges	Staging will be critical to the success of the project, and it is important to obtain contractor input on the methods and options.	The Request for Proposal for Dredging/ Stabilization/ Capping was issued Dec 21, 2012 with proposals currently due back to the CPG in late January 2013. Selection is anticipated by the end of February 2013. To the extent practical, the methods and options of the selected contractor will be incorporated into the Final Design document.
23	23	Page 4-2, Section 4.3.2	Position Accuracy and Dredge Tolerance	Please describe how the variations in horizontal (+/- 1.0 foot) and vertical (+/- 4 inches) positioning accuracy were derived. A horizontal foot seems excessive and can result in a large change in volume removed.	The horizontal and vertical accuracy of the positioning software are +/- 3 inches and +/- 2 inches , respectively. The horizontal and vertical removal tolerances (allowable over dredge) are +/- 1 foot and +/- 4 inches respectively. The text will be revised accordingly.
	24	Page 4-2, Section 4.3.2	Position Accuracy and Dredge Tolerance	The accuracies anticipated will be difficult to achieve if there is any outside influences that could impact stability – wind, waves, boat traffic, current, mismatched equipment, etc. Please clarify how excavation barge stability will be achieved and revise as necessary.	The excavation barge will be spudded which will minimize the outside influences which could impact stability.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
24	25	Page 4-3, Section 4.3.3	only 12 hours/day	Please provide comment on stated 12 hour work day and the impact tides will have on production rate within permissible working hours.	As the tides change daily it will have an impact on the approach to work, but will not have a significant impact on the average production rate. It is anticipated that the dredging operations will work from upstream to downstream and from the western portion of the removal area towards the shoreline in order to maximize the hours that sufficient draft is available for the marine vessels.
25	26	Page 4-3, Table 4-1	TABLE 4-1	Please include movement of the spud barge as a dredge production rate parameter. Revise as necessary.	The spud barge movement rate will be included as a dredge rate parameter. However, as these movements will likely be conducted in parallel with the barge movements there will be little impact on the dredge production rate.
26	27	Page 4-4, Section 4.3.4, 3rd paragraph	It is important that the dredge operator match the target depth shown by the dredging software as closely as possible. The environmental clamshell buckets are designed to be completely filled at a specific penetration depth, usually between 1 and 1.5 ft. If the bucket penetration is too deep, excess sediment extrudes through the vents and is resuspended as the bucket is lifted through the water column. Therefore, care must be taken to avoid overfilling the bucket. Excess water from dredging will be contained during barge transport and removed at the off-loading facility for subsequent handling and treatment prior to discharge.	Please describe what Quality Control procedures the dredge operator will follow to match removal of sediment target depth.	A discussion of the quality control procedures to be followed by the dredge operator during removal will be added to the Construction Quality Control Plan.
28	Page 4-4, Section 4.3.4, 3rd paragraph	It is important that the dredge operator match the target depth shown by the dredging software as closely as possible. The environmental clamshell buckets are designed to be completely filled at a specific penetration depth, usually between 1 and 1.5 ft. If the bucket penetration is too deep, excess sediment extrudes through the vents and is resuspended as the bucket is lifted through the water column. Therefore, care must be taken to avoid overfilling the bucket. Excess water from dredging will be contained during barge transport and removed at the off-loading facility for subsequent handling and treatment prior to discharge.	Please describe procedures to manage containerizing excess water (or include reference to where in the report this is described).	The containerized excess water will be managed by the stabilization contractor and the Final Design document will be revised to reference Section 6.2.1 where a discussion of how this water will be managed is provided.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
27	32	Page 4-5	The contractor will be responsible for notifying the Newark Port Authority, USACE, and other affected parties.	The last sentence of first paragraph says that "The contractor will be responsible for notifying Newark, Port Authority, USACE, and other affected parties." Please revise this to say that "the CPG, through its contractor, will be responsible…." Also, there should be a comma after Newark.	The Final Design document will be revised accordingly.
28	29	Page 4-5, Section 4.3.7	Hours of Operation	Please clarify if it is intended that one of the 6 working days will be reserved for maintenance or the 7th day will be used for that purpose. Revise as necessary.	It is currently assumed that the dredging operations will be conducted 6 days/week, 12 hours/day with the 7th day reserved for maintenance. The document will be revised to reflect this assumption. Changes to this assumption will impact the project schedule.
29	30	Page 4-5, Section 4.4.1, bullet 1	River velocity is relatively low (0.82 ft/sec) during typical flow conditions (<1,200 cfs annual average flow), which are anticipated to be the general conditions during the majority of the proposed construction timeframe; thus, the transport of resuspended material from the dredge area will be reduced.	Identify the proposed construction timeframe (months) when river velocity is at 0.82 ft/sec. Will river velocity be monitored and dredging operations suspended if river velocity increases? Please clarify and revise, as necessary.	It is assumed that the river will be at the average velocity of 0.82 ft/sec the majority of the time. The river velocity will be monitored and operations will be suspended when the velocity increases above the effective velocity of a silt curtain system (1.7 to 2.5 ft/sec) unless it can be shown via monitoring that project water quality goals can be maintained without use of the silt curtain system. The document will be revised accordingly.
30	31	Page 4-5, Section 4.4.1, bullet 2	Bathymetry is relatively shallow with an average water depth of less than about 4 ft, significantly reducing the typical vertical heights through which resuspension occurs.	Please comment on impact to dredging operations if average bathymetry is greater than 4 ft and revise as necessary.	As the water depth increases the potential time that resuspended solids could enter the water column also increases which would potentially impact the water quality. However, the average depth of water is not anticipated to vary significantly such that it would impact the conclusions of resuspension.
31	33	Page 4-7, Section 4.4.4	Silt Curtains	Please provide more detail to support that the silt curtain and boom will handle suspended materials as described.	The use of silt curtains to manage resuspension during dredging is a USACE recognized project management practice (USACE Technical Guidelines for Environmental Dredging of Contaminated Sediments (Sept 2008) and Silt Curtains as a Dredging Project Management Practice (ERDC-TN-DOER-E21, Sept 2005)) and has been demonstrated to be effective on many environmental dredging projects. The guidance documents will be referenced in the design documents.
32	34	Page 4-8, Section 4.4.5	Rationale for No Sheet Pile Wall	The slope resulting from removal of 2 feet of sediment will result in the need to stabilize the unexcavated sediment on the mid-river side of the excavation (not adjacent to the bank). Please clarify and revise, as necessary.	Please clarify the concern with respect to the stability of the mid-river sediment. Given the relatively shallow nature of the dredge cut (2 ft) the impact to the interface failing is not considered to be significant. In addition, the dredge area will be capped relatively soon after the dredging is complete.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
	35	Page 4-8, Section 4.4.5	Rationale for No Sheet Pile Wall	We appreciate that additional justification was provided to support the choice to not use a sheet pile wall, but the argument is still not fully supported. Please provide more concrete information. In addition, please remove the sentence beginning, "Given the vast difference in concentrations…." This is not a valid reason to not use a sheet pile wall, though highlighting the differences between the RM 10.9 removal and the Tierra Phase 1 removal is helpful.	It is not clear what additional justification the USEPA would like to support the conclusion provided. It is believed that the rationale provided in the bullets and the sentence following these bullets (flooding) are sufficient reasons to not install a sheet pile wall. The sentence beginning "Given .. " will be removed from the text.
33	36	Page 4-9, Section 4.6.1	Water Quality	The calculations in Section 4.4 do not address river conditions outside the stated parameters, therefore the conclusions in Section 4.4 are not indicative of all possible river conditions during dredging operations, including higher than average flows. Please clarify and revise, as necessary.	Dredging and capping operations will be suspended when the river velocity exceeds the operational effectiveness of the silt curtains (approximately 1.7 to 2.5 ft/sec; note that 1.7 fps is equivalent to 6000 cfm) unless it can be shown via monitoring that project water quality goals can be maintained without use of the silt curtain system. The resuspension calculations will be revised to also include the higher velocity (2.5 ft/sec).
	37	Page 4-9, Section 4.6.1	Water Quality	Please explain the statement, "Monitoring for constituents other than the most significant compounds of concern could yield confusing and inconclusive results." Could the word confusing be deleted? And why were NTU, TSS and select COPCs chosen as monitoring parameters? Please clarify and revise, as necessary.	Monitoring for all constituents detected in the sediment could be problematic as some of these constituents could be associated with other point sources which are not associated with the removal actions. Therefore, it is proposed that only 2,3,7,8-TCDD, PCBs, mercury and total suspended solids be monitored. NTU and TSS were selected because they can be measured in real-time during the dredging/capping operations. COPC monitoring data cannot be collected in real-time and therefore will not be used to monitor the dredging operations. The initial turbidity-TSS correlation will be established based on the water column monitoring data collected from RM 10.2 in 2009/2010. This correlation will be refined during the baseline monitoring and updated as required during the initial dredging operations. Once established, TSS samples will be collected on a daily basis and when an exceedance of the turbidity trigger values has occurred. As with the TSS/turbidity correlation the 2009/2010 water column monitoring data collected from RM 10.2 will be used. COPC sampling will also be incorporated into the Baseline monitoring program and the results utilized to refine any correlations between COPCs and turbidity/TSS. The locations and frequency of the COPC sampling are being developed.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
	38	Page 4-9, Section 4.6.1	Water Quality	Please identify the "select COPCs" to be monitored and the timeframe anticipated when monitoring of parameters may be suspended when dredging activities are not occurring.	As COPC data cannot be measured in real-time, only TSS/turbidity data will be collected on a daily basis. COPC data would be collected for informational purposes only and collection is anticipated to be consistent with the Baseline Monitoring program. However, if an exceedance of the TSS/turbidity levels occurs, COPC samples will be collected from the resultant plume. The text will be revised accordingly.
34	39	Page 4-9, Section 4.6.1.1	Baseline Turbidity and TSS Monitoring	Please explain why a site specific relationship between NTU and TSS "must" be established. Revise as necessary.	The relationship between NTU and TSS needs to be established in order to conduct real time monitoring of the water quality. TSS analytical results cannot be obtained in real time and as a result corrective action cannot taken in a timely fashion. The document will be revised to clarify this point.
35	41	Page 4-10, Sec 4.6.1.1	Turbidity buoy #1: a fixed background location upstream of the dredging operations at approximately 3,300 ft (1,000 m) upstream of the removal area. Turbidity buoy #2: upstream at the edge of the dredging area of influence, located approximately 1,000 ft (300 m) of the dredging operations. The monitoring location will be moved to always remain approximately 1,000 ft upstream of the dredging location. Turbidity buoy #3: downstream at the edge of the dredging area of influence, located approximately 1,000 ft (300 m)downstream of the dredging operations. The monitoring location will be moved to always remain approximately 1,000 ft downstream of the dredging location. Turbidity buoy #4: a fixed downstream location of the dredging operations at approximately 3,300 ft (1,000 m) downstream of the removal area.	The turbidity buoys (particularly buoys 2 and 3) may need to be relocated to locations more proximate to active dredging based on site specific observations.	In addition to the four (4) monitoring locations (2 near field and 2 far field) a fifth “mobile” buoy will be located in close proximity to the dredging/capping operations. This buoy will be located up or downstream of the operations depending on the direction of flow. The text will be revised to include a discussion of this monitoring buoy.
36	42	Page 4-10, Section 4.6.1.2	Initial Dredging Monitoring	The second paragraph of the section states, “and turbidity will be measured continually during dredging operations at both stationary locations.” Do you mean at all 4 monitoring locations (Turbidity Buoy #1 to #4)? The section is confusing at which buoy locations will be used to establish the baseline turbidity-to-TSS relationship. Please clarify and revise, as necessary.	Yes, monitoring will be conducted at all locations and the text will be revised accordingly. The baseline turbidity-TSS relationship will be developed independent of the monitoring buoys. The text will be revised accordingly.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
37	40	Page 4-9, Section 4.6.1.3	Resuspension Monitoring	Explain rationale that 4 consecutive readings at buoys 2 and 3 respectively, must be encountered for trigger and action level responses to be activated.	Quality Control practitioners use the criteria of 4 consecutive readings outside of a pre-established norm to indicate that there is a non-random cause for exceeding those norms. Therefore, four (4) consecutive turbidity readings (collected in 15 min intervals) are required to trigger an action response.
38	43	Page 4-11, Section 4.6.1.3, First Bullet	If the turbidity "trigger level," or early warning criterion, of 35 nephelometric turbidity units (NTU) above background is exceeded over four consecutive readings (i.e., 60 minutes), at turbidity buoy #2 the dredge operator will be notified and directed to evaluate dredging BMPs as identified in Section 4.4.3.	Buoy #2 is referenced in the first bullet. However, I believe it is intended to be buoy #3, as buoy #2 is upgradient of the dredge. Please clarify and revise, as necessary.	As the removal area is tidal influenced both Buoys #2 and #3 will be monitored for an exceedance of the established trigger values. The text will be revised accordingly.
39	48	Page 4-11, Section 4.6.1.3	trigger level," or early warning criterion, of 35 nephelometric turbidity units (NTU) above background is exceeded over four consecutive readings (i.e., 60 minutes), at turbidity buoy #2 the dredge operator will be notified and directed to evaluate dredging BMPs as identified in Section 4.4.3. If the turbidity "action level"	The trigger and action levels presented may be too high. NJAC 7:9B-1.14(d)13 specifies maximum 30-day average of 15 NTU and maximum 50 NTU for surface water. Please modify or provide additional justification to support the values presented.	Based on the RI/FS turbidity data collected in 2009/2010 the average turbidity and TSS for the RM 10.9 area are 19.8 NTU and 28.9 mg/l, respectively. Therefore, the river has a baseline turbidity which already exceeds the 30-day average and has exceeded the 50 NTU maximum. NJDEP limits are based on NJAC 7:9B-1.14. The trigger and action levels should be based on an increase above these background levels; further discussion is required.
40	44	Page 4-11, Section 4.6.1.3, Second Bullet	If the turbidity "action level" of 70 NTU above background is exceeded over four consecutive readings (i.e., 60 minutes), at turbidity buoy #3 dredging will be suspended until the turbidity level returns to below the 80 NTU action level for four consecutive readings (i.e., 60 minutes), unless it can be demonstrated that dredging is not the cause of the exceedance.	Please provide an explanation as to how the determination will be made to demonstrate dredging is not the cause of a turbidity exceedance.	Turbidity exceedances could be the result of other marine activity on the river either upstream or downstream of the removal area. Readings at the various far, near and mobile locations along with visual observations would be used to make this determination.
	45	Page 4-11, Section 4.6.1.3, Second Bullet	If the turbidity "action level" of 70 NTU above background is exceeded over four consecutive readings (i.e., 60 minutes), at turbidity buoy #3 dredging will be suspended until the turbidity level returns to below the 80 NTU action level for four consecutive readings (i.e., 60 minutes), unless it can be demonstrated that dredging is not the cause of the exceedance.	Both 70 NTU above background and 80 NTU are cited as the action levels in the second bullet. Please clarify and revise, as necessary.	70 NTU is the correct value and the text will be revised to be consistent.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
41	46	Page 4-11, Section 4.6.1.3, Third Bullet	If dredging is suspended, water column samples will be collected at the buoy location where the trigger level occurred for the target COPCs (2,3,7,8 TCDD, Total PCBs, mercury.	The third bullet is missing a closed parenthesis ")" at the end of the sentence. Please revise.	The document will be revised accordingly.
42	47	Page 4-11, Table 4-6	TABLE 4-6	For the continuous turbidity data, please describe how the results will be analyzed for comparison against the trigger and action levels. Please consider logging the data and averaging across 15 minute intervals. In addition, the continuous readings should be archived and analyzed at the conclusion of the removal action.	A correlation between NTU and TSS will be established during the baseline monitoring and initial dredging operations. This data will then be used to estimate the TSS concentrations during operations based on the NTU data collected at the various monitoring locations. The real-time NTU data collected will be averaged across 15 min intervals as indicated. The data will be available during the project and archived and available for analysis after the removal action.
43	49	Page 4-12, Section 4.6.1.4	spill kits	Consider placing spill kits on all river side equipment and revise, as necessary.	The text will be revised to indicate that spill kits will be placed on all riverside equipment.
44	50	Page 4-12, Section 4.6.2	Air Quality	A more robust odor monitoring plan may be needed. Please describe how odor will be measured/determined as offensive and revise the document as necessary.	The text will be revised to include additional discussion on the air monitoring approach. A separate air monitoring plan will be developed for the project and will be included as part of the Community Health and Safety Program.
45	51	Page 4-13, Section 4.6.3	The following measures will be taken to prevent noise levels from exceeding the limits	Please add a bullet stating that equipment will not be operated if 75 dBA emission is exceeded.	There will be a noise level monitoring program. It is anticipated that equipment on the river may produce a noise level of 95 dBA. Using the standard noise level equations it is shown that this level drops off significantly and will not exceed the noise levels as required by the local ordinance in the park or in residential areas. This information will be in the Community HSP of the Final design. The document will be revised accordingly.
46	52	Page 4-13, Section 4.6.3	This information includes dredging experience to date, initial setting for dredging and related works, and the site's being most of the time at least 1,000 ft from the nearest residential area except for the narrow north removal area which is closer.	The sentence beginning with, "This information includes dredging experience…" is confusing. Please revise.	The document will be revised accordingly.
47	54	Page 5-1, Section 5	Rationale for Not Conducting Sediment-Washing Pilot Test(s)	Please describe the basis for the $700 to $900 per cubic yard estimate and provide the unit cost for sediment stabilization, transport and disposal under this work for comparison. Alternatively, you may remove the cost information.	The cost information will be removed from the document.
48	56	Page 6-2, Section 6.2.1	Barge Water Removal	Based on Land Disposal Restriction requirements, waste water cannot contain more than 1% TSS. Filtering the water to reduce the amount of suspended solids and fines when off loading it from the barge to the storage tanks may make sense.	It is anticipated that the water removed from the barges will have a residence time of at least one day within the storage tanks which will allow the suspended solids to settle out. However, filtering the water prior to transferring it to the tanker trucks for offsite disposal will be considered and the document revised accordingly.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
49	55	Page 6-2, Table 6-1	TABLE 6-1	The time to unload 250 cy barge seems slightly optimistic. Please clarify the source of the 33 min estimate and revise as necessary.	Removal is based on 250 CY barge containing 78 CY of excess water and 172 CY of sediment. The total time to unload a barge (debris, excess water & sediment) is estimated to be nearly 2 hours. The basis for the barge removal rate is provided in Appendix B - Dredging and Material Transport Design Support Documents and Calculations.
50	57	Page 7-1, Section 7.1	Design Criteria	Please identify the depth of river when proposed cap will be resistant to forces from propeller scour and revise the document as necessary.	The cap will be resistant to propeller scour from expected recreational boat uses at all depths.
	58	Page 7-1, Section 7.1	Design Criteria	Please provide information supporting the assumption that ice scour will have a minimal impact upon the cap at the shoreline. Revise the document as necessary.	The Section 7.1 text quoted the draft focused feasibility study (MPI, 2007), which included the following: "Although ice scour at the shoreline could be an issue, it could be mitigated via biostabilization or installation of armoring materials at the shoreline." The Type B cap armoring utilized in the shallower water depths is 12 inches thick, which is more than twice the 4.5-inch thickness required to protect from erosion during a 100-year flood. This armoring should be sufficient to protect the cap from ice scour at the shoreline. Monitoring the physical integrity of the cap will be performed as part of the long-term monitoring plan.
51	59	Page 7-4,Table 7-1	TABLE 7-1	Why are higher TOCs used in this table vs. the 4.8 to 5.9% values cited in Table 3-2? The value selected should be on the low side of the mean for conservatism in pore water concentration estimation. Please clarify and revise, as necessary.	The fraction organic carbon values presented in Table 7-1 are the actual values associated with the locations at which the maximum COPC concentrations were measured. The values of 4.8% and 5.9% from Table 3-2 represent the average TOC values for depth intervals of 3.5 – 5.5 ft bgs and 0.0 – 2.5 ft bgs, respectively. Organic COPC sediment concentrations are directly related TOC concentrations, with higher chemical concentrations associated with higher TOC. Therefore, using the TOC associated with the actual sediment sample is a reasonable first approach to estimating pore water concentrations. Notwithstanding, actual pore water measurements are being collected as part of the upcoming field activities and will be used to refine the final cap design.
52	60	Page 7-7, Section 7.2.2.1	Preliminary Armor Layer Sizing	It is unclear which armor sizes and thicknesses were selected for the construction of the cap. Please clearly define the final selection and make them consistent throughout this document and the design package (specifications and figures). Currently the specification calls for 18 inches of type A armor and the figure shows 12 inches. It is also unclear what size armor and thickness were used to generate the armor volume in Table 7-5. Please clarify and revise, as necessary.	Both types of armor layers have an average thickness of 12 inches. The design package will be revised to be consistent with the Pre-Final Design text.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
53	61	Page 7-8, Section 7.2.4	Design Cap Plan and Sections	Was the installation of permanent sheeting in the area upstream of station 31+00 considered to allow for capping of that area? Please clarify and revise, as necessary.	Dredging the area upstream of station 31+00 was considered to be less expensive and more conducive to meeting the project schedule than installing permanent sheeting to allow capping.
	62	Page 7-8, Section 7.2.4	Design Cap Plan and Sections	The reference to Figure 4-1 in this section appears to be incorrect. Please clarify and revise, as necessary.	The documents will be revised accordingly.
54	63	Page 7-8, Section 7.2.5, 2nd paragraph	Following cap placement, natural sedimentation will begin to fill in the spaces between the armor stone and eventually cover the stone as the area is generally depositional. The deposited sediment will create a habitat similar to the current sediment habitat which is a mudflat with no submerged aquatic vegetation. The shape of the armor stone (i.e., angular versus rounded) is not expected to impact the new habitat because the stone will be buried by the soft sediment. Thus, there is no advantage to the habitat in using rounded stone for the armor layer. As noted in Section 7.2.3, the armor and geotextile will create a barrier to bioturbation into the contaminated sediment and active layer as they will prevent benthic organisms from burrowing below the reestablished soft sediment layer.	Please provide support to the statement that the shape of the armored stone (angular vs. round) will not impact new habitat. How long before sediment covers the stone? Please clarify and revise, as necessary.	The text notes the following: "The shape of the armor stone (i.e., angular versus rounded) is not expected to impact the new habitat because the stone will be buried by the soft sediment. Thus, there is no advantage to the habitat in using rounded stone for the armor layer." The sediment is expected to cover the stone within several years.
55	64	Page 7-8, Section 7.3	Active Cap Sorbent Materials	The text indicates that the sand gradation requirement was reduced from 0-3% to 0-1% for fine aggregates. However, Table 7-3 shows 0-11% for #200 sieve. Please clarify and revise, as necessary.	The table will be corrected to reflect 0-1% for #200 sieve.
56	65	Page 7-11, Section 7.6.2	Placement Accuracy and Tolerance	The proposed approach is acceptable, provided a minimum of 11 measurements are made per work area being capped, and no measured thickness value is less than 50% of the design thickness for a given layer. Please clarify and revise, as necessary.	The design thicknesses of Armor Stone Types A and B are 10 in. and 4.5 in., respectively, which include a 50% increase in thickness for underwater placement. The minimum thicknesses have been set equal to those design thicknesses. The average thickness of both armor layers is 12 inches.
57	66	Page 7-11, Section 7.6.5	Hours of Operation	The expected number of work days per week was previously stated as 6. Please clarify and revise, as necessary.	See response to Comment #29.
58	68	Pages 8-1 and 8-2, last full paragraph and subsequent bullet points	In 2008, Region 2 prepared a memo to the file for the LPRSA that discussed their consideration of the Passaic River sediments pursuant to RCRA 40 CFR Section 261.31. Region 2 reviewed historical information and consulted USEPA Headquarters Office of Solid Waste, and concluded that it did not have sufficient evidence to conclude that the	The text contains confusing references to the CWA 404 permit exemption. Also, the decision tree, as currently drafted, does not appear to be consistent with how EPA requires sediment to be handled and disposed of if it exhibits a RCRA hazardous characteristic. Suggested revisions: In 2008, Region 2 prepared a memo to the file for the LPRSA that discussed	The text will be revised to include the paragraphs beginning with "In 2008, ….". and "The sediment will be disposed….". The following paragraph will be included in response to the third requested paragraph: If the sediment stream being disposed of is determined to be hazardous, and results for one or more underlying hazardous constituents exceed 10 times the Universal Treatment

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
			sediments in the Passaic River contain "listed" hazardous waste per 40 CFR 261. However, if the sediment exhibits a characteristic of hazardous waste, it must be managed as though it were a hazardous waste. Dredged material that is subject to the requirements of a permit that has been issued under 404 of the Federal Water Pollution Control Act (33 U.S.C.1344) or section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413) is not a hazardous waste. The New Jersey Water Quality Certification and AUD may address the transportation and disposal of this dredged material. If not specified in those mechanisms, the decision tree for RM 10.9 sediment disposal is listed below: If required by the landfill, the sediment will be disposed of as if it were "characteristic" hazardous waste if sample results analyzed per Toxicity Characteristic Leaching Procedure (TCLP – SW-846 Method 1311) for regulated constituents exceed the regulatory screening levels and if such samples are deemed to be representative of the sediment waste stream. If TCLP sample results exceed screening levels for one or more constituents, then the material may be considered a RCRA hazardous waste by the disposal facility, and therefore would likely be able to achieve the applicable standards evaluated per the Land Disposal Restrictions (LDR) found at 40 CFR 268. If the results for one or more underlying hazardous constituents exceed 10 times the Universal Treatment Standards (UTS), then the disposal facility may require that the sediment be treated before it can be disposed of in a landfill. Since the sediment being removed from the RM 10.9 Removal Area contains dioxins, the only treatment available per the LDR is incineration.	their consideration of the Passaic River sediments pursuant to RCRA 40 CFR Section 261.31. Region 2 reviewed historical information and consulted USEPA Headquarters Office of Solid Waste, and concluded that it did not have sufficient evidence to conclude that the sediments in the Passaic River contain "listed" hazardous waste per 40 CFR 261. Dredged material that is subject to the requirements of a permit that has been issued under 404 of the Federal Water Pollution Control Act (33 U.S.C.1344) or section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413) is not a hazardous waste. The New Jersey Water Quality Certification and AUD may address the transportation and disposal of this dredged material within New Jersey. However, if the sediment exhibits a characteristic of hazardous waste, it must be managed as though it were a hazardous waste. The decision tree for RM 10.9 sediment disposal is listed below: The sediment will be disposed of as if it were "characteristic" hazardous waste if sample results analyzed per Toxicity Characteristic Leaching Procedure (TCLP – SW-846 Method 1311) for regulated constituents exceed the regulatory screening levels and if such samples are deemed to be representative of the sediment waste stream. If the results for one or more underlying hazardous constituents exceed 10 times the Universal Treatment Standards (UTS), then the sediment must be treated before it can be disposed of in a landfill to meet the Land Disposal Restrictions (LDR) found at 40 CFR 268. Since the sediment being removed from the RM 10.9 Removal Area contains dioxins, the only treatment currently available to achieve the standards identified in 40 CFR 268.48 is incineration.	Standards (UTS), then the sediment must be treated before it can be disposed of in a landfill to meet the Land Disposal Restrictions (LDR) found at 40 CFR 268.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
59	69	Page 8-4	However, the sediment may require disposal at a RCRA Subtitle C landfill due to regulations concerning concentrations of dioxin.	The statement that the sediment may require disposal at a RCRA Subtitle C facility "due to regulations concerning concentrations of dioxin" is not supported. If the sediment does not exhibit a RCRA characteristic, then RCRA does not require disposal in Subtitle C. If there is another regulation – perhaps a state regulation in the state where the receiving landfill is located – then it should be identified.	Agree that RCRA does not require disposal in a Subtitle C landfill, however, many Subtitle D landfill permits prohibit their acceptance of waste containing dioxins.
60	70	Appendix A Figures - Figures A-2a and A-2b	[Appendix A]	Looking at Figures A-2A and A-2B, locations 0343 and 0349 have 2,3,7,8-TCDD concentrations greater than 1,000 ppt, but do not appear to be included in the removal area. In addition, locations 0343, 0346, 0349 are highly elevated in the 0.5 to 1.5 foot depth interval. All 3 of these locations are just outside of the boundaries of the removal area. Please either include them, or justify why you think this is not necessary.	The Removal Area runs adjacent to, but does not include, the federal navigation channel. Locations on the boundary line, such as 0343, are included in the Removal Area. However, locations 0346 and 0349 are within the federal navigation channel and therefore not part of the Removal Area.
61	71	Appendix A, Figure A-2C	[Appendix A]	The data on this figure appears to be incorrect. Please revise.	The wrong dataset was inadvertently presented in this figure. The figure will be corrected.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
62	72	Appendix B - Estimated Dredging Production Rate, pages 3 and 4 of 9	[Appendix B]	The solid content (52%) seems a little high given the nature of the sample. Please provide basis for this number. Is this based on moisture content analysis of a sediment sample in the area? The excess water per bucket grab will vary greatly depending on the dredge operator and depth of sediment removal. Any attempt to "clean" the bottom will result in significantly more water. Please clarify if this is accounted for in the calculations. This section is a little confusing. If we interpret this correctly, a volume of material that could be dredged given specific constraints has been identified. Given those constraints, it would require operating at 83% “uptime” in order to hit your volume (10 hr per day available dredging time out of 12 hours would be 83% efficient). In another section a 65% dredge “uptime” average is noted, this makes more sense but does not match all the presumed constraints and assumptions for daily volumes. Please review and revise, as necessary. 12 hour days are noted elsewhere in the document, however here, 10 hour days are referenced. Please clarify and revise, as necessary.	The solids content is based on the average value for all sediment samples collected from the removal area. See response to Comment #20 It was assumed that the working hours were 12 hours/day. Of these 12 hours it was assumed that the 1st and last hour would be used for non-production and administrative activities (e.g., safety briefings and transferring personnel to and from the project sitec.). Therefore, the total hours available each day for dredging was assumed to be 10 hours. It was assumed that the working hours were 12 hours/day. Of these 12 hours it was assumed that the 1st and last hour would be used for non-production and administrative activities (i.e., safety briefings and transferring personnel to and from the project site etc.). Therefore, the total hours available each day for dredging was assumed to be 10 hours. The Effective Working Time Efficiency or “up time” is defined as the ratio of the time during the dredging operation when the dredge is actually removing sediment to the total hours available to dredge (in this case 10 hours). For this project the average uptime was assumed to be 65% which is typical for this type of project. Therefore, of the 10 hours that a dredge could be working it was assumed that it only operated 6.5 hours.
63	73	Appendix B- Estimated Dredging Production Rate, page 5 of 9	[Appendix B]	The larger bucket increases the chance of a higher percentage of water. Please clarify if this has been considered and revise, as necessary.	The bucket size was selected based on similar dredging operations currently being conducted on the Hudson River. While larger buckets are available given the shallow dredge depth required (2 feet) they were not considered practical as they would be less efficient and result in the chance of a higher percentage of water. Larger buckets will also require larger excavators/cranes which in turn require more draft.
64	74	Appendix B – Estimated Excess Water in Dredge Bucket, page 2 of 3	[Appendix B]	The estimated volume of sediment removed may be hard to achieve on the second and third cuts, and will likely be mostly water. Please clarify and revise, as necessary.	See response to Comment #20.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
65	75	Appendix [sic: Appendix C?]	[Appendix C?]	Cross-sections from 27+00 to 28+00 show that the dredge prism does not extend to the natural bank. Please clarify.	The dredge prism is based on the removal area boundary which is defined by the characterization data collected for the project. The boundary as presented in the AOC does not extend to the natural bank in all places.
66	76	Appendix C – Drawing C-4, Sheet 8 of 30	[Appendix C]	Consider including comments about protection of the known and unknown utilities. Revise as necessary.	The drawing will be revised accordingly. Offsets for the United Water pipelines will also be included on the drawings. This offset area will be designated as a "no Dredge" zone.
67	77	Appendix C – Drawing C-8, Sheet 12 of 30	[Appendix C]	Depending on the material, maintaining the slopes shown (+/- 10:1 or greater) to the tolerances required, may be problematic. This gets more significant as the slopes increase. Please include a description of any considerations made, and revise as necessary.	The greater slopes are associated with the dredging to native sediment in the northern portion of the removal area. The native material is considered to be more stable than the over lying soft sediment. The text will be revised to include more discussion of these areas.
68	78	Appendix C – Drawing C-21, Sheet 25 of 30	[Appendix C]	The note on the figure indicates the "Dock is non-existing and is available to contractors". This statement seems contradictory. Please clarify and revise, as necessary.	No upland property in Lyndhurst Township will utilized for the Removal Action including, but not limited to the Municipal Recreation Area, Riverside County Park and Passaic River Coalition. All documents and drawings will be revised in the final design document to reflect this decision.
69	79	Appendix D Technical Specifications Section 01 32 00 "Construction Progress Documentation"	[Appendix D]	Page 2, Section 1.03, item A.5: It is unclear what is meant by the "use of float time disclosed or implied by use of alternate float-suppression techniques shall be shared to proportionate benefit of CH2M HILL and Contractor". Please clarify and revise, as necessary.	"Float Time" is amount of time that a task can slip before it affects another task or the project's finish date. The purpose of this language is to indicate that while the project schedule may have float or slack time between tasks it is the CPG to manage and the Subcontractor cannot assume that this time can be used to extend the duration of their task(s).
70	80	Appendix D Technical Specifications Section 01 33 00 "Submittal Procedures"	[Appendix D]	Page 3, Section 1.03, item A: The engineer should prepare a submittal list so that both parties agree in advance what needs to be done. Please clarify and revise, as necessary.	The technical specifications indicate the submittals which are required for the various tasks of the project. These submittals will be consolidated into a single document as part of the pre-construction activities.
71	81	Appendix D Technical Specifications Section 01 45 16, Part 1 General	[Appendix D]	Page 2, Section 1.01, item E.5: This technical specification indicates that CH2M HILL can request additional work ("Other activities determined by CH2M HILL to cause an increase or potential increase in water turbidity or other transport of contaminants"). This would be a change to the contractor and should be budgeted.	Noted.
	82	Appendix D, Technical Specifications Section 01 45 16 "Water Quality Monitoring and Control" – Part 1	[Appendix D]	How will CH2MHill's surface water monitoring program relate to the construction contractor's program? Who will conduct the program outlined in the main text of the design report?	The CH2M HILL monitoring program will parallel the Contractors program. The Contractor is responsible for monitoring the turbidity (NTU) at the near field monitoring locations. CH2M HILL will monitor the far field monitoring locations as well as collect water column samples in the near field to monitor the selected COPC.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
	83	Appendix D Technical Specifications Section 01 45 16 “Water Quality Monitoring and Control” – Part 3 Execution	[Appendix D]	The monitoring plan described in this specification is different from the design report, including buoy locations and quantities, frequency, and terminologies used. Please clarify and revise, as necessary.	The design report and technical specifications will be revised to be consistent.
72	84	Appendix D Technical Specifications Section 01 45 55 “Environmental Protection” – Part 1 General	[Appendix D]	Page 2, Section 1.04, item A: Please define what permits CH2M HILL will obtain prior to commencement of site work, and what “additional specific permits” are the responsibility of the Contractor(s). Page 2, Section 1.04, item B: If CH2M HILL is providing the permits, why is a payment section needed? Why is this included in the Environmental Protection section? Please clarify and revise, as necessary.	The section will be revised to indicate what permits are the CPG’s responsibility and what permits are the responsibility of the Contractor. This section is indicating that no separate pay time will be included for the environmental protection requirements provided within the technical specification. This includes permits which are the responsibility of the Contractor. The text will be revised accordingly.
	85	(a.) Appendix D Technical Specifications Section 01 45 55 “Environmental Protection” – Part 2 Execution	[Appendix D]	(a.) Please provide clarification on the following items and revise the text, as necessary.	
		(b.) Page 7, Section 2.03, item C	[Appendix D]	(b.) Please provide more information on odor control. Depending on the location, sediments can have odor issues. Please clarify if any observations have been made in the area with regard to sediment odor. Please revise, as necessary.	See response to Comment #50
		(c.) Page 9, Section 2.04, item E.1.c	[Appendix D]	(c.) It was stated previously in this section that CH2M HILL would be obtaining all required permits. Please clarify this item that states the Contractor is responsible for obtaining waste water disposal permits. Revise as necessary.	The Contractor will be required to obtain permits or permit modifications associated with the stabilization facility (air permit, AUD). The CPG will be responsible for obtaining permits associated with the disposal of treated sediment and wastewater.
		(d.) Page 9, Section 2.07, item C	[Appendix D]	(d.) Please clarify and define in detail what is expected of the Contractor so there is no misunderstanding. What additional cleaning requirements are needed, and what Federal, State, and local jurisdictional office will need to be consulted.	The text will be expanded accordingly.
		(e.) Page 10, Section 2.08, item A	[Appendix D]	(e.) What is required of the Contractor with regard to the permanent and temporary pollution control facilities and devices?	The contractor will be required to maintain air control systems associated with the stabilization facility.
		(f.) Page 10, Section 2.10, item A	[Appendix D]	(f.) Please clarify if any groundwater is associated with this project.	Groundwater is not associated with this project.

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73	86	(a.) Appendix D Technical Specifications Section 01 50 10 "Safety Requirements and Protection of Property," Page 1, Section 2.01	[Appendix D]	(a.) Please clarify what, if any, medical monitoring requirements exist. Revise as necessary.	The Statement of Work included as an attachment to the Request for Proposal requires "All Subcontractor employers participating in hazardous waste operations or emergency response (or if required by the Contract) shall maintain an adequate medical surveillance program in accordance with 29 CFR 1910.120 or 29 CFR 1926.65 and other applicable OSHA standards".
		(b.) Page 1, Section 3.01	[Appendix D]	This section should specify that this work shall be conducted over water. Please clarify and revise, as necessary.	The specific health & safety requirements will be addressed in the Contractors Project Health and Safety Plan.
74	87	(a.) Appendix D Technical Specifications Section 01 51 03 "Shoreside Support Facilities" – Part 1 General, Page 1, Section 1.02	[Appendix D]	(a.) Depending on the permit, these may be more easily obtained by the engineer. Please clarify what is required by this item and revise as necessary.	See response to Comment #78
		(b.) Page 2, Section 1.04, item C	[Appendix D]	(b.) With the statement, "Pre-dredging will not be permitted for installation of the temporary dock," is the contractor to assume that there is sufficient depth to allow use of the temporary dock in the area specified for all required or expected activities? Please clarify and revise, as necessary.	None of the Riverside Park properties (County Parkor Township Recreation Area) are being considered for use on the project and the documents will be revised accordingly. The Contractors will however, be permitted to establish a floating dock on the river to support river activities.
75	88	(a.) Appendix D Technical Specifications Section 01 91 14 "Dredged Material Processing Related Activities" – Part 2 Dredged Material Processing, Page 2, Section 2.01	[Appendix D]	(a.) This section seems very unclear. It seems difficult to fairly bid this section and obtain bids that will be comparable. Please add sufficient detail to clarify this item. Revise as necessary.	Only two stabilization facilities are being considered for this work and neither has provided questions and/or exceptions to the specification requirements. Therefore, no change is required.
		(b.) Page 5, Section 2.03	[Appendix D]	(b.) Why is this section so different from Section 01 45 33? Please clarify and revise, as necessary.	The technical specifications will be revised to be consistent.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
76	89	(a.) Appendix D Technical Specifications - Section 02 32 00 "Sediment Capping" Part 2 Products	[Appendix D]	(a.) Please clarify and revise the following items, as necessary:	
		(b.) Page 3, Section 2.01	[Appendix D]	(b.) Please make correction to the table and the footnote regarding the percent of fine aggregate passing #200 sieve. It should be 0 to 1%, not 0 to 11%.	The text will be corrected.
		(c.) Pages 5 and 6, Section 2.03 Tables:	[Appendix D]	(c.) Please revise tables to include footnotes and/or units. As presented, the tables are confusing.	The tables will be revised accordingly.
		(d.) Page 7, Section 2.05, item B:	[Appendix D]	(d.) Please clarify and correct the following statement, if applicable: "Contractor must receive the approval from the Contractor prior to delivery and placement of sand." Should the word "Contractor" be replaced with CH2M HILL?	The tables will be revised accordingly.
	90	(a.) Appendix D Technical Specifications - Section 02 32 00 "Sediment Capping" Part 3 Execution	[Appendix D]	(a.) Please clarify and revise the following items, as necessary:	

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
		(b.) Page 7, Section 3.01, item D1	[Appendix D]	(b.) These tolerances are going to be difficult to hit and verify consistently on an uneven underwater surface. Please clarify how this will be achieved and revise, as necessary.	These types of tolerances have been achieved on other capping projects when utilizing specialized placement techniques. The thicknesses, which can be particularly difficult to meet unless the correct techniques are utilized, are primarily verified with using cores and settlement plates, which are not affected by uneven underwater surfaces. The tolerances have been revised as follows: For sand, the average thickness shall be 6 inches with a minimum thickness of 3 inches. For active materials, the minimum average shall be 3.0 inches and minimum thicknesses shall be 3.0 inches. For geotextile, place within a horizontal tolerance of 1.0 foot. Overlaps shall be a minimum of 18 inches for geotextile. For Type A armor materials, within a horizontal tolerance of 2.0 feet, an average thickness of 12 inches, and a minimum thickness of 10 inches, except that no armor stone will be allowed within the shipping channel. For Type B armor materials, within a horizontal tolerance of 2.0 feet, an average thickness of 12 inches, and a minimum thickness of 4.5 inches, except that no armor stone will be allowed within the shipping channel.
		(c.) Page 7, Section 3.01, item D2	[Appendix D]	(c.)Please clarify and correct the following statement, if applicable: “Placement tolerances will be monitored and verified by the Contractor after each material is placed.” Should the word “Contractor” be replaced with CH2M HILL?	It should be “CH2M HILL” and the text will be revised accordingly.
		(d.) Page 8, Section 3.01, item E2	[Appendix D]	(d.) Should “CH2M HILL” be used instead of “Engineer” in this paragraph? The term “Engineer” was not used before. Please clarify and revise, as necessary.	The text will be revised to CH2M HILL.
		(e.) Page 9, Section 3.04, item A	[Appendix D]	(e.) It will be difficult to place and level the armor stone on top of the geotextile fabric at the tolerances indicated. Please clarify precisely how this will be accomplished and revise, as necessary.	The tolerances have been revised as in the response to comment #90 (b) above. The thickness criteria for the armor stone refers to minimum average and minimum thicknesses. Additional armor thickness in excess of these minimum thicknesses is acceptable.
		(f.) Page 9, Section 3.04, item B	[Appendix D]	(f.) This item is confusing and awkward as written. Please clarify and revise, as necessary.	The text will be revised accordingly.

Comment No. Word	EPA	Location	Text Highlighted	Comment	Response
77	91	(a.) Appendix D Technical Specifications - Section 31 23 34 "Dredging and Delivery Part 1 General, Page 1, Section 1.01, item B.3	[Appendix D]	(a.) This item is not part of the delivery and should not be listed as a bullet under delivery. Please clarify and revise, as necessary.	Dredging, stabilization and capping have been combined into one contract. Therefore, this item is considered part of the delivery.
		(b.) Page 6, Section 1.06, item A.1.f	[Appendix D]	(b.) This item must be consistent with the other QC requirements. Please clarify and revise, as necessary.	Agreed. The documents will be reviewed to ensure they are consistent.
	92	(a.) Appendix D Technical Specifications - Section 31 23 34 "Dredging and Delivery Part 2 Products, Page 12, Section 2.01, item A.1	[Appendix D]	(a.) Please confirm the production rate matches the quantities reported in the remainder of the document. Revise as necessary.	The production rate indicated (minimum of 450 yd^3/day) in the technical specifications is in line with the design documents (461 yd^3/day).
		(b.) Page 13, Section 2.01, item A.4.a.2	[Appendix D]	(b.) With a vertical tolerance of minus 4 inches for the dredge, it is questionable that the Contractor can achieve an allowable overdredge of no more than 4 inches. Please clarify and revise, as necessary.	The vertical tolerance specified is currently being achieved on the Hudson River Project and the contractors have not commented on this requirement as part of their review of the Request for Proposal.
		(c.) Page 13, Section 2.01, item A.6	[Appendix D]	(c.) Please insert the word NOT to correct the statement to read "use of spud anchors are acceptable for the dredge or barge equipment as long as their use does NOT result in non compliance of the water quality criteria."	The text will be revised accordingly.
		(d.) Page 14, Section 2.04, item A	[Appendix D]	(d.) Given the sensitive nature of the work, a redundant silt curtain may be warranted.	Redundant silt curtains are not considered necessary at the beginning of the project. However, redundant silt curtains are being considered as a contingency if it is determined by evaluation(s) of the cause(s) for the exceedance(s) of the trigger/action level(s) that their use will minimize the potential for future exceedance(s).
78	93	Appendix K Cap LTM Plan, Page 2-1, Section 2.1	[Appendix K]	Please clarify if there has been any consideration of the removal of habitat for benthic organisms with the Armor layer on top of the geotextile? Please revise as necessary.	Benthic habitat will be temporarily removed when the armor layer is placed. However, soft sediment will continue to deposit over the area and the benthic community will eventually re-establish over time.

Comment No.					
Word	**EPA**	**Location**	**Text Highlighted**	**Comment**	**Response**
	94	Appendix K Cap LTM Plan, Page 2-1, Section 2.1	[Appendix K]	Is there a contingency plan in place if the geotextile layer is uncovered, comes loose, or becomes a navigational hazard? Is the geotextile going to be anchored as well as covered? Please clarify and revise, as necessary.	The geotextile layer is anchored by a 12-inch-thick armor layer that weighs in excess of 13,000 tons. In the unlikely event that the geotextile is exposed and a portion of geotextile comes loose, the cap will be repaired.
79	95	Appendix K Cap LTM Plan, Page 3-1, Section 3.2.1	[Appendix K]	Conducting monitoring directly after construction should be considered to establish baseline conditions. Please clarify and revise, as necessary.	The majority of the sediment consolidation (and related expression of pore water will occur in the first year . Therefore, the first physical monitoring will occur one year after construction. The long-term monitoring plan will be revised to also initiate chemical monitoring at the same time. The cap performance will be compared to surface water quality, which will be “baseline” chemical concentrations in the cap’s armor layer.
80	96	Appendix K Cap LTM Plan, Page 6-1, Section 6.1	[Appendix K]	Any cap erosion or identified chemical breakthrough should trigger increased cap monitoring frequency. Please clarify and revise as necessary.	The long term monitoring plan will include an adaptive management section that will include increased monitoring if cap erosion or chemical breakthrough occur.
81	97	Appendix L	[Appendix L]	There does not appear to be sufficient detail provided to evaluate the scope or timelines presented. Please clarify and revise, as necessary.	Further clarification is required.